



# GASB 45 ACTUARIAL VALUATION

Fiscal Year Ending June 30, 2016

# Town of Cumberland

**Nyhart Actuary & Employee Benefits**

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**November 02, 2016**

**Town of Cumberland  
Brian Silvia  
45 Broad Street  
Cumberland, RI 02864**

This report summarizes the GASB 45 actuarial valuation for the Town of Cumberland 2015/16 fiscal year. To the best of our knowledge, the report presents a fair position of the funded status of the plan in accordance with GASB Statement No. 45 (Accounting and Financial Reporting by Employers for Post-Employment Benefits Other Than Pensions).

The information presented herein is based on the actuarial assumptions and substantive plan provisions summarized in this report and participant information furnished to us by the Plan Sponsor. We have reviewed the employee census provided by the Plan Sponsor for reasonableness when compared to the prior information provided but have not audited the information at the source, and therefore do not accept responsibility for the accuracy or the completeness of the data on which the information is based. When relevant data may be missing, we may have made assumptions we feel are neutral or conservative to the purpose of the measurement. We are not aware of any significant issues with and have relied on the data provided.

The discount rate and other economic assumptions have been selected by the Plan Sponsor. Demographic assumptions have been selected by the Plan Sponsor with the concurrence of Nyhart. In our opinion, the actuarial assumptions are individually reasonable and in combination represent our estimate of anticipated experience of the Plan. All calculations have been made in accordance with generally accepted actuarial principles and practice.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement.

To our knowledge, there have been no significant events prior to the current year's measurement date or as of the date of this report that could materially affect the results contained herein.

**November 02, 2016**

Neither Nyhart nor any of its employees has any relationship with the plan or its sponsor that could impair or appear to impair the objectivity of this report. Our professional work is in full compliance with the American Academy of Actuaries "Code of Professional Conduct" Precept 7 regarding conflict of interest. The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Should you have any questions please do not hesitate to contact us.

A handwritten signature in black ink, appearing to read "Evi Laksana", with a horizontal line drawn underneath it.

Evi Laksana, ASA, MAAA  
Consulting Actuary

A handwritten signature in black ink, appearing to read "Randy Gomez", with a horizontal line drawn underneath it.

Randy Gomez, FSA, MAAA  
Valuation Actuary

## Summary of Results

Presented below is the summary of GASB 45 results for the fiscal year ending June 30, 2016 compared to the prior fiscal year.

	<i>As of July 1, 2014</i>		<i>As of July 1, 2015</i>	
<b>Actuarial Accrued Liability</b>	\$	17,131,832	\$	20,593,445
<b>Actuarial Value of Assets</b>	\$	(581,200)	\$	(1,762,031)
<b>Unfunded Actuarial Accrued Liability</b>	\$	16,550,632	\$	18,831,414
<b>Funded Ratio</b>		3.4%		8.6%

	<i>FY 2014/15</i>		<i>FY 2015/16</i>	
<b>Annual Required Contribution</b>	\$	1,294,570	\$	1,393,964
<b>Annual OPEB Cost</b>	\$	1,536,770	\$	1,638,780
<b>Annual Employer Contribution</b>	\$	1,420,875	\$	1,550,643

	<i>As of June 30, 2015</i>		<i>As of June 30, 2016</i>	
<b>Net OPEB Obligation</b>	\$	10,846,327	\$	10,934,464

	<i>As of June 30, 2016</i>	
<b>Total Active Participants</b>		36
<b>Total Retiree Participants</b>		65

The active participants number above may include active employees who currently have no health care coverage. Refer to the Summary of Participants section for an accurate breakdown of active employees with and without coverage.

Below is a breakdown of total GASB 45 liabilities allocated for past, current, and future service for the fiscal year beginning July 1, 2015 compared to the prior valuation as of July 1, 2014.

	<i>As of July 1, 2014</i>		<i>As of July 1, 2015</i>	
<b>Present Value of Future Benefits</b>	<b>\$</b>	<b>22,201,951</b>	<b>\$</b>	<b>24,099,111</b>
Active Employees		9,284,736		7,808,793
Retired Employees		12,917,215		16,290,318
<b>Actuarial Accrued Liability</b>	<b>\$</b>	<b>17,131,832</b>	<b>\$</b>	<b>20,593,445</b>
Active Employees		4,214,617		4,303,127
Retired Employees		12,917,215		16,290,318
<b>Normal Cost</b>	<b>\$</b>	<b>397,062</b>	<b>\$</b>	<b>378,287</b>
<b>Future Normal Cost</b>	<b>\$</b>	<b>4,673,057</b>	<b>\$</b>	<b>3,127,379</b>

**Present Value of Future Benefits (PVFB)** is the total liability amount as of July 1, 2014 and July 1, 2015 and represents the amount the Town needs to fully fund its retiree health care obligations assuming all actuarial assumptions are met.

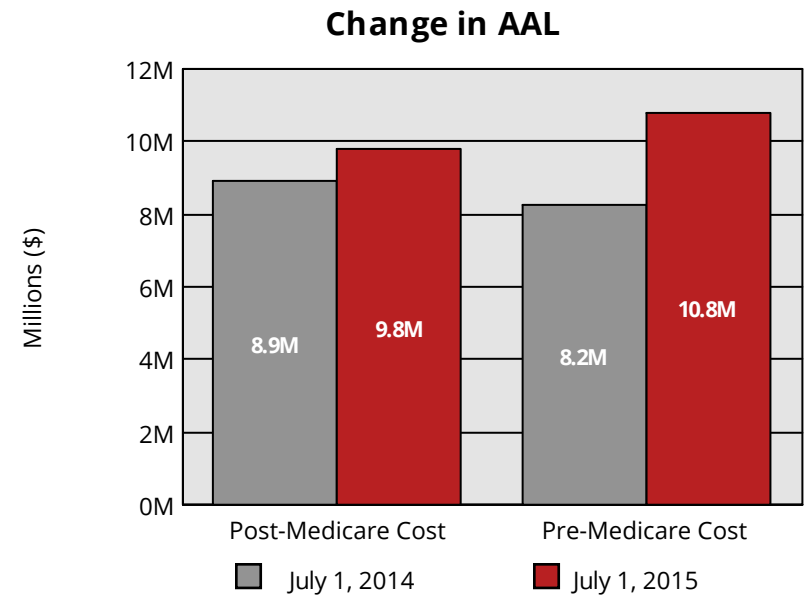
**Actuarial Accrued Liability** is the portion of PVFB considered to be accrued or earned as of July 1, 2014 and July 1, 2015. This amount is a required disclosure in the Required Supplementary Information section.

**Normal Cost** is the portion of the total liability amount that is attributed and accrued for current year active employee service by the actuarial cost method level percent of pay.

**Future Normal Cost** is the portion of the total liability amount that is attributed to the future employee service by the actuarial cost method level percent of pay.

Below is a breakdown of total GASB 45 liabilities allocated for pre and post Medicare eligibility. The liability shown below includes explicit (if any) and implicit subsidies. Refer to the Substantive Plan Provisions section for complete information on the Plan Sponsor's GASB subsidies.

Actuarial Accrued Liability (AAL)	As of July 1, 2014		As of July 1, 2015	
<b>Total Active AAL</b>	<b>\$</b>	<b>4,214,617</b>	<b>\$</b>	<b>4,303,127</b>
Active Pre-Medicare		2,447,153		2,843,593
Active Post-Medicare		1,767,464		1,459,534
<b>Total Retirees AAL</b>	<b>\$</b>	<b>12,917,215</b>	<b>\$</b>	<b>16,290,318</b>
Retirees Pre-Medicare		5,794,094		7,949,297
Retirees Post-Medicare		7,123,121		8,341,021
<b>Total AAL</b>	<b>\$</b>	<b>17,131,832</b>	<b>\$</b>	<b>20,593,445</b>

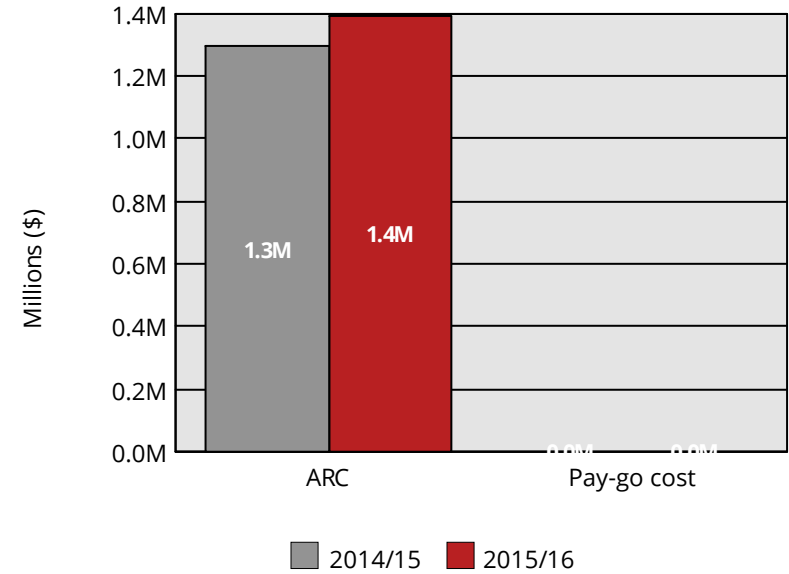


### Development of Annual Required Contribution (ARC)

Required Supplementary Information	FY 2014/15	FY 2015/16
<b>Actuarial Accrued Liability</b> as of beginning of year	\$ 17,131,832	\$ 20,593,445
<b>Actuarial Value of Assets</b> as of beginning of year	(581,200)	(1,762,031)
<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	<b>\$ 16,550,632</b>	<b>\$ 18,831,414</b>
Covered payroll	N/A	\$ 2,203,419
UAAL as a % of covered payroll	N/A	854.6%

Annual Required Contribution	FY 2014/15	FY 2015/16
Normal cost as of beginning of year	\$ 397,062	\$ 378,287
Amortization of the UAAL	807,189	918,424
Total normal cost and amortization payment	\$ 1,204,251	\$ 1,296,711
Interest to end of year	90,319	97,253
<b>Total Annual Required Contribution (ARC)</b>	<b>\$ 1,294,570</b>	<b>\$ 1,393,964</b>

### Cash vs. Accrual Accounting



**Annual Required Contribution (ARC)** is the annual expense recorded in the income statement under GASB 45 accrual accounting. It replaces the cash basis method of accounting recognition with an accrual method. The GASB 45 ARC is higher than the pay-as-you-go cost because it includes recognition of employer costs expected to be paid in future accounting periods.



## Development of Annual OPEB Cost and Net OPEB Obligation

<b>Net OPEB Obligation (NOO)</b>	<b>FY 2014/15</b>	<b>FY 2015/16</b>
ARC as of end of year	\$ 1,294,570	\$ 1,393,964
Interest on NOO to end of year	804,782	813,475
NOO amortization adjustment to the ARC	(562,582)	(568,659)
Annual OPEB cost	\$ 1,536,770	\$ 1,638,780
Annual employer contribution for pay-go cost	(0)	(0)
Annual employer contribution for pre-funding	(1,420,875)	(1,550,643)
Change in NOO	\$ 115,895	\$ 88,137
NOO as of beginning of year	10,730,432	10,846,327
<b>NOO as of end of year</b>	<b>\$ 10,846,327</b>	<b>\$ 10,934,464</b>

**Pay-as-you-go Cost** is the expected total employer cash cost for the coming period based on all explicit and implicit subsidies. It is also the amount recognized as expense on the Income Statement under pay-as-you-go accounting.

**Net OPEB Obligation** is the cumulative difference between the annual OPEB cost and employer contributions. This obligation will be created if cash contributions are less than the current year expense under GASB 45 accrual rules.

The net obligation is recorded as a liability on the employer's balance sheet which will reduce the net fund balance.

The value of implicit subsidies is considered as part of cash contributions for the current period. Other cash expenditures that meet certain conditions are also considered as contributions for GASB 45 purposes.

\* Pay-go cost is being paid directly from the OPEB Trust for FY 2014/15 and 2015/16.

\*Annual employer contributions for pre-funding for FY 2014/15 and 2015/16 include accrued contributions that were deposited into the OPEB Trust after the end of each fiscal year.

## Summary of GASB 45 Financial Results

Presented below is the summary of GASB 45 results for the fiscal year ending June 30, 2016 compared to the prior fiscal years. Prior years fiscal information is as shown in the Town's Notes to Financial Statement for fiscal year ending June 30, 2015.

### Schedule of Funding Progress

<i>As of</i>	<i>Actuarial Accrued Liability (AAL)</i>	<i>Actuarial Value of Assets (AVA)</i>	<i>Unfunded AAL (UAAL)</i>	<i>Funded Ratio</i>	<i>Covered Payroll</i>	<i>UAAL as % of Covered Payroll</i>
	<i>A</i>	<i>B</i>	<i>C = A + B</i>	<i>D = B / A</i>	<i>E</i>	<i>F = C / E</i>
July 1, 2015	\$ 20,593,445	\$ (1,762,031)	\$ 18,831,414	8.6%	\$ 2,203,419	854.6%
July 1, 2014	\$ 17,131,832	\$ (581,200)	\$ 16,550,632	3.4%	N/A	N/A
July 1, 2013	\$ 20,374,644	\$ (100,000)	\$ 20,274,644	0.5%	N/A	N/A

### Schedule of Employer Contributions

<i>FYE</i>	<i>Employer Contributions</i>	<i>Annual Required Contribution (ARC)</i>	<i>% of ARC Contributed</i>
	<i>A</i>	<i>B</i>	<i>C = A / B</i>
June 30, 2016	\$ 1,550,643	\$ 1,393,964	111.2%
June 30, 2015	\$ 1,420,875	\$ 1,294,570	109.8%
June 30, 2014	\$ 1,320,001	\$ 1,578,750	83.6%

### Historical Annual OPEB Cost

<i>As of</i>	<i>Annual OPEB Cost</i>	<i>% of Annual OPEB Cost Contributed</i>	<i>Net OPEB Obligation</i>
June 30, 2016	\$ 1,638,780	94.6%	\$ 10,934,464
June 30, 2015	\$ 1,536,770	92.5%	\$ 10,846,327
June 30, 2014	\$ 1,794,709	73.5%	\$ 10,730,432

**Reconciliation of Actuarial Accrued Liability**

The Actuarial Accrued Liability (AAL) is expected to change on an annual basis as a result of expected and unexpected events. Under normal circumstances, it is generally expected to have a net increase each year. Below is a list of the most common events affecting the AAL and whether they increase or decrease the liability.

**Expected Events**

- Increases in AAL due to additional benefit accruals as employees continue to earn service each year
- Increases in AAL due to interest as the employees and retirees age
- Decreases in AAL due to benefit payments

**Unexpected Events**

- Increases in AAL when actual premium rates increase more than expected. A liability decrease occurs when premium rates increase less than expected.
- Increases in AAL when more new retirements occur than expected or fewer terminations occur than anticipated. Liability decreases occur when the opposite outcomes happen.
- Increases or decreases in AAL depending on whether benefit provisions are improved or reduced.

	<i>FY 2014/15</i>	<i>FY 2015/16</i>
AAL as of beginning of year	\$ 17,131,832	\$ 20,593,445
Normal cost as of beginning of year	397,062	378,287
Expected benefit payments during the year	(882,768)	(851,184)
Interest adjustment to end of year	1,282,162	1,541,537
Expected AAL as of end of year†	\$ 17,928,288	\$ 21,662,085
(Gain) / loss due to experience	2,131,968	0
(Gain) / loss due to provisions / assumption	533,189	0
Actuarial Accrued Liability as of end of year	\$ 20,593,445	\$ 21,662,085

**Reconciliation of AAL** shows what the actuary expects the actuarial accrued liability to be at the beginning of the following fiscal year based on current assumptions and plan provisions. The expected end of year AAL will change as actual plan experience varies from assumptions. Generally, the AAL is expected to have a net increase each year.

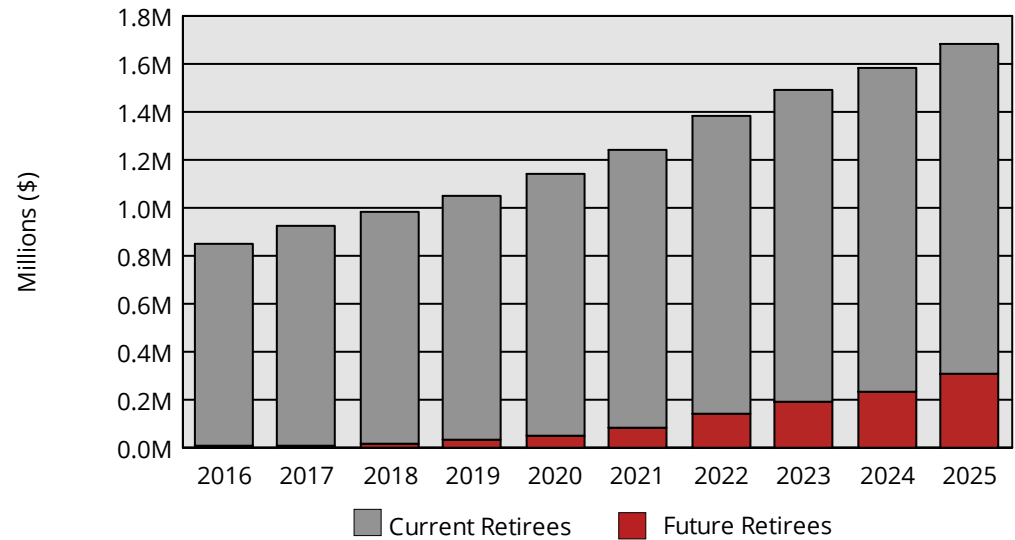
Actuarial Accrued Liability (AAL) as of beginning of year was actuarially rolled-back from end of year AAL on a “no gain/loss” basis.

The below projections show the actuarially estimated employer subsidized contribution for retiree benefits for the next 10 years. Results below are shown separately for current/future retirees and gross claims costs/contributions. The projections include explicit and implicit subsidies, and do not take into account future new hires.

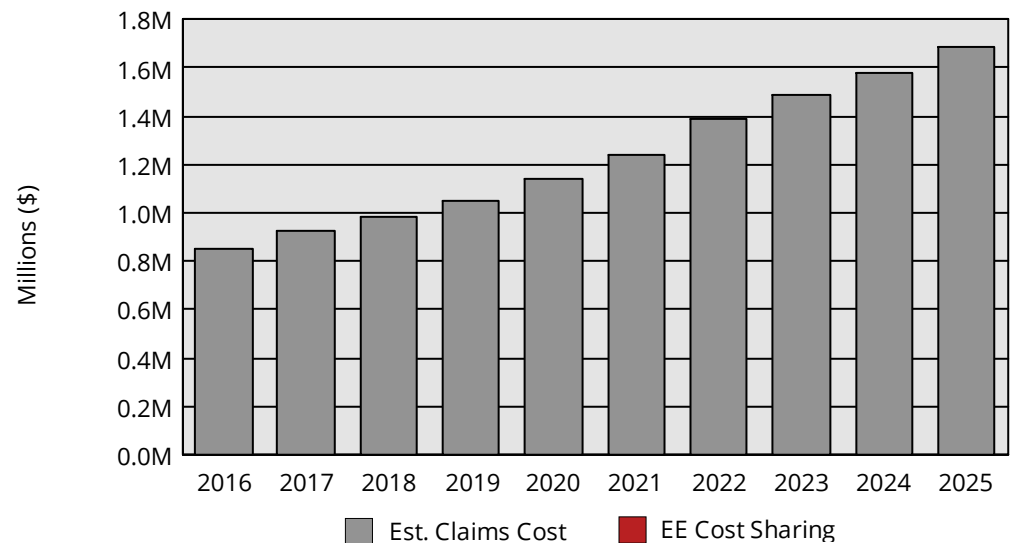
FYE	Current Retirees	Future Retirees	Total
2016	\$ 840,579	\$ 10,606	\$ 851,184
2017	\$ 916,231	\$ 11,560	\$ 927,791
2018	\$ 967,198	\$ 15,256	\$ 982,454
2019	\$ 1,015,779	\$ 34,702	\$ 1,050,481
2020	\$ 1,090,839	\$ 46,752	\$ 1,137,591
2021	\$ 1,157,246	\$ 82,947	\$ 1,240,193
2022	\$ 1,243,363	\$ 143,415	\$ 1,386,778
2023	\$ 1,298,135	\$ 189,749	\$ 1,487,884
2024	\$ 1,345,778	\$ 235,885	\$ 1,581,663
2025	\$ 1,379,743	\$ 307,231	\$ 1,686,974

FYE	Estimated Claims Cost	Retiree Contributions	Net Employer-Paid Costs
2016	\$ 851,184	\$ 0	\$ 851,184
2017	\$ 927,791	\$ 0	\$ 927,791
2018	\$ 982,454	\$ 0	\$ 982,454
2019	\$ 1,050,481	\$ 0	\$ 1,050,481
2020	\$ 1,137,591	\$ 0	\$ 1,137,591
2021	\$ 1,240,193	\$ 0	\$ 1,240,193
2022	\$ 1,386,778	\$ 0	\$ 1,386,778
2023	\$ 1,487,884	\$ 0	\$ 1,487,884
2024	\$ 1,581,663	\$ 0	\$ 1,581,663
2025	\$ 1,686,974	\$ 0	\$ 1,686,974

Projected Employer Pay-go Cost



Claims and Cost Sharing Projection



**Eligibility** Police officers hired prior to July 1, 2013 are eligible for lifetime retiree health coverage (medical and dental) from the Town once they attain 20 years of service. Officers hired on/after July 1, 2013 are not eligible for retiree health benefits. All other Town employees are only eligible for COBRA coverage at retirement.

**Disability Pension** Police officers are eligible for duty disability pension without any age or years of service requirement. They will receive the same health benefits as regular retirees.

**Spouse Benefit** Surviving spouse can continue coverage after the death of the retiree or active employees eligible to retire. Town subsidy continues to surviving spouse upon death of the retiree or active employee eligible to retire.

**Retiree Cost Sharing** None; except for employees receiving disability pension that have to contribute the full cost of coverage until they would have had 20 years of service at retirement, at which time they will receive free coverage.

**Medical Benefit** All officers retiring on/after July 1, 2013 must enroll in Plan D (HDHP \$3,000 plan) upon retirement. All existing retirees as of July 1, 2013 are allowed to remain in the health plan they had elected. Monthly working rates effective on July 1, 2016 are as shown below:

Health Plans	Plan Description	Groups	Single	Family
<b>Pre-65 Plans</b>				
Plan A	HDHP \$2,000 deductible	Actives	\$ 533.62	\$ 1,376.98
Plan B	Healthmate \$0 deductible	Recruits	\$ 519.54	\$ 1,340.73
Plan C	Classic Blue	Pre-65 retirees	\$ 600.94	\$ 1,550.75
Plan D	HDHP \$3,000 deductible	Pre-65 retirees	\$ 578.52	\$ 1,492.82
Plan E	Healthmate \$0 deductible	Pre-65 retirees	\$ 533.67	\$ 1,377.22
<b>Post-65 Plans</b>				
	Medicare Plan C	Post-65 retirees	\$ 189.00	\$ 378.00
	Medicare Rx Plan	Post-65 retirees	\$ 178.68	\$ 357.36

**Dental Benefit**

Monthly dental working rates effective on July 1, 2016 are \$31.09 for single coverage and \$100.34 for family coverage.

**School Liabilities**

There is no longer GASB liability for the School employees and retirees effective on July 1, 2012 as employees and existing retirees pay the full cost of retiree-appropriate working rates at retirement.

**Medicare Part B Reimbursement**

The Town pays for the monthly Medicare Part B premium of \$121.80 effective on January 1, 2016 for retiree and spouses.

The actuarial assumptions used in this report represent a reasonable long-term expectation of future OPEB outcomes. As national economic and Town experience change over time, the assumptions will be tested for ongoing reasonableness and, if necessary, updated.

There are changes to the actuarial methods and assumptions since the last GASB valuation, which was for the fiscal year ending June 30, 2013. Please refer to the Actuary's Notes section in the Appendix for more details regarding these changes. For the current year GASB valuation, we have updated the per capita costs, mortality table, and health care trend rates. We expect to update health care trend rates and per capita costs again in the next full GASB valuation, which will be for the fiscal year ending June 30, 2017.

<b>Measurement Date</b>	June 30, 2016 with results actuarially rolled-back to July 1, 2015 on a "no loss/no gain" basis
<b>Discount Rate</b>	7.5%
<b>Payroll Growth</b>	4.5% (for amortization purposes only)
<b>Inflation Rate</b>	3.0% per year
<b>Cost Method</b>	Projected Unit Credit with linear proration to decrement
<b>Amortization</b>	Level % of pay over thirty years based on an open group
<b>Employer Funding Policy</b>	Fully funding the difference between the Annual Required Contribution and pay-as-you-go cost
<b>Experience Study</b>	Best actuarial practices call for a periodic assumption review and Nyhart recommends the Town to complete an actuarial assumption review (also referred to as an experience study) before transitioning to the new GASB 75 standard for fiscal year ending June 30, 2017. The actuarial assumptions have not been updated since at least the 2012 valuation.
<b>Census Data</b>	<p>Census information was provided by the Town as of August 2016. We have reviewed it for reasonableness and no material modifications were made except for the following:</p> <ul style="list-style-type: none"> <li>• Calculation of years of service needed to be eligible for retiree health benefit was done using sworn-in dates in the last full valuation instead of hire dates. For officers who are first included in this year's census data, we have assumed that their sworn-in dates are the same as their hire dates. For officers included in the last full valuation, we have used the sworn-in dates provided in the last full valuation.</li> </ul>

**Health Care Coverage Election Rate**

100% of active police officers with current coverage are assumed to elect coverage at retirement.  
0% of active employees without current coverage are assumed to elect coverage at retirement.

100% of retirees with current coverage are assumed to continue coverage in the future.  
0% of retirees without current coverage are assumed to elect coverage in the future.

**Spousal Coverage**

70% of employees are assumed to be married at retirement. Husbands are assumed to be three years older than wives. Spousal coverage and ages for current retirees is based on actual data.

**Mortality**

RP-2014 Mortality Table with blue collar adjustments and Social Security 2015 generational improvements from 2006

**Disability**

Rates are based on Rhode Island Municipal Employees Retirement System (MERS) accidental disability rates used in the June 30, 2015 actuarial valuation. Sample annual disability rates are as shown below.

Age	Rates
25	0.17%
30	0.22%
35	0.29%
40	0.44%
45	0.72%
50+	1.21%

**Turnover Rate**

Assumption used to project terminations (voluntary and involuntary) prior to meeting minimum retirement eligibility for retiree health coverage. The rates represent the probability of termination in the next 12 months. No terminations are assumed for Police officers.

**Retirement Rate**

Annual retirement rates for Police officers are as shown below:

YOS	Rates
20	70%
21 - 24	10%
25	70%
26+	100%



**Health Care Trend Rates**

FYE	Medical/Rx	Dental	Part B
2017	9.00%	4.50%	3.25%
2018	8.50%	4.25%	3.50%
2019	8.00%	4.00%	3.75%
2020	7.50%	3.75%	4.00%
2021	7.00%	3.50%	4.25%
2022	6.50%	3.25%	4.25%
2023	6.00%	3.00%	4.25%
2024	5.50%	3.00%	4.25%
2025+	5.00%	3.00%	4.25%

The initial trend rate was based on a combination of employer history, national trend surveys, and professional judgment.

The ultimate trend rate was selected based on historical medical CPI information.

**Retiree Contributions**

Retiree contributions are assumed to increase according to health care trend rates.

**Per Capita Costs**

Annual per capita costs were calculated based on the Town’s monthly working rates effective on July 1, 2016 actuarially increased using health index factors and current enrollment. The costs are assumed to increase with medical/rx trend rates.

- For pre-Medicare existing retirees, the per capita costs were calculated based on the weighted average (based on enrollment) of Plans C, D, and E working rates.
- For future pre-Medicare retirees, the per capita costs were calculated based on Plan D working rates.

Annual per capita costs are as shown below:

Age	Current Retirees		Future Retirees	
	Male	Female	Male	Female
<55	\$ 6,900	\$ 8,100	\$ 7,300	\$ 8,600
55 – 59	\$ 9,300	\$ 9,000	\$ 9,900	\$ 9,600
60 – 64	\$ 11,900	\$ 10,700	\$ 12,700	\$ 11,400
65+	\$ 4,412	\$ 4,412	\$ 4,412	\$ 4,412

The per capita costs represent the cost of coverage for a retiree-only population.

Actuarial standards require the recognition of higher inherent costs for a retired population versus an active population.

Annual Medicare Part B reimbursement is \$1,462 and assumed to increase with Part B trend rates. Annual Dental per capita cost is \$373 and is assumed to increase with Dental trend rates.

**Explicit Subsidy**

The difference between (a) the premium rate and (b) the retiree contribution. Below is an example of the monthly explicit subsidies for a future Police retiree enrolled in Plan D with spousal coverage.

	<b>Premium Rate</b>	<b>Retiree Contribution</b>	<b>Explicit Subsidy</b>
	<b>A</b>	<b>B</b>	<b>C = A - B</b>
Retiree	\$ 578.52	\$ 0.00	\$ 578.52
Spouse	\$ 914.30	\$ 0.00	\$ 914.30

**Implicit Subsidy**

The difference between (a) the per capita cost and (b) the premium rate. Below is an example of the monthly implicit subsidies for a male Police future retiree age 64 with spouse of the same age enrolled in Plan D.

	<b>Per Capita Cost</b>	<b>Premium Rate</b>	<b>Implicit Subsidy</b>
	<b>A</b>	<b>B</b>	<b>C = A - B</b>
Retiree	\$ 1,058.33	\$ 578.52	\$ 479.81
Spouse	\$ 950.00	\$ 914.30	\$ 35.70

All employers that utilize premium rates based on blended active/retiree claims experience will have an implicit subsidy.

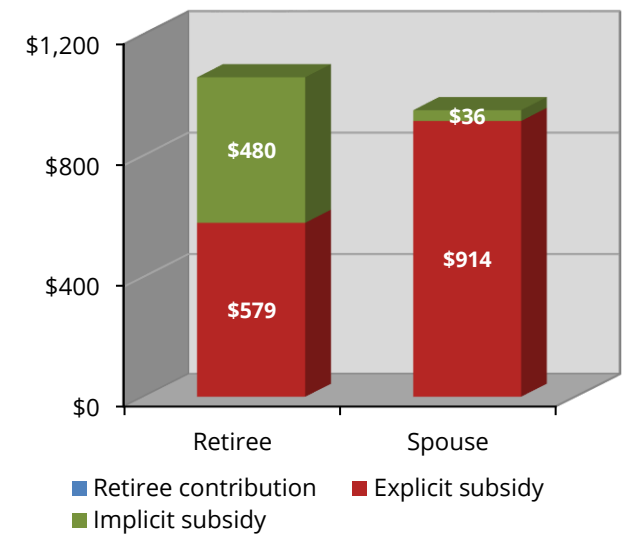
There is an exception for Medicare plans using a true community-rated premium rate.

**GASB Subsidy Breakdown**

Below is a breakdown of the GASB 45 monthly total cost for a male Police future retiree age 64 with spouse of the same age enrolled in Plan D.

	<b>Retiree</b>	<b>Spouse</b>
Retiree contribution	\$ 0.00	\$ 0.00
Explicit subsidy	\$ 578.52	\$ 914.30
Implicit subsidy	\$ 479.81	\$ 35.70
<b>Total monthly cost</b>	<b>\$ 1,058.33</b>	<b>\$ 950.00</b>

**GASB Subsidy Breakdown**



<i>Actives with coverage</i>	<i>Single</i>	<i>Family</i>	<i>Total</i>	<i>Avg. Age</i>	<i>Avg. Svc</i>	<i>Salary</i>
HDHP \$2,000 deductible	4	29	33	40.2	10.5	\$2,032,227
<b>Total actives with coverage</b>	<b>4</b>	<b>29</b>	<b>33</b>	<b>40.2</b>	<b>10.5</b>	<b>\$2,032,227</b>

<i>Actives without coverage</i>	<i>Total</i>	<i>Avg. Age</i>	<i>Avg. Svc</i>	<i>Salary</i>
Actives without coverage	3	37.9	8.0	\$171,192
<b>Total actives without coverage</b>	<b>3</b>	<b>37.9</b>	<b>8.0</b>	<b>\$171,192</b>

Average service is calculated based on the sworn-in-date.

Active employees enrollments shown above include only those who are eligible for retiree health benefits (i.e. hired prior to July 1, 2013). Active employees without coverage who are eligible for retiree health benefits are assumed not to elect coverage at retirement. They have been excluded from the GASB valuation.

In addition to the above, there are eight active employees (four with coverage and another four without coverage) who are not eligible for retiree health benefits because they were hired on/after July 1, 2013. They have been excluded from the GASB valuation.

<i>Retirees with coverage</i>	<i>Single</i>	<i>Family</i>	<i>Total</i>	<i>Avg. Age</i>
Classic Blue	1	4	5	62.0
HDHP \$3,000 deductible		3	3	49.9
Healthmate \$0 deductible	8	30	38	56.0
Plan 65	12	7	19	73.7
<b>Total retirees with coverage</b>	<b>21</b>	<b>44</b>	<b>65</b>	<b>61.4</b>

**Active Age-Service Distribution**

Age	Years of Service										Total
	< 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	
Under 25											0
25 to 29			1								1
30 to 34		2	7	1							10
35 to 39		1	4	3							8
40 to 44				1	5						6
45 to 49		1	1	1	3	1					7
50 to 54					2	1					3
55 to 59				1							1
60 to 64											0
65 to 69											0
70 & up											0
<b>Total</b>	<b>0</b>	<b>4</b>	<b>13</b>	<b>7</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>

Includes active employees eligible for retiree health benefits only.

## APPENDIX

**Appendix A - Comparison of Participant Demographic Information**

The active participants' number below may include active employees who currently have no health care coverage. Refer to Summary of Participants section for an accurate breakdown of active employees with and without coverage.

	<i>As of June 30, 2012</i>	<i>As of June 30, 2016</i>
Active Participants	44	44
Retired Participants	61	65
Averages for Active		
Age	37.5	38.3
Service	9.0	9.5
Averages for Inactive		
Age	60.6	61.4

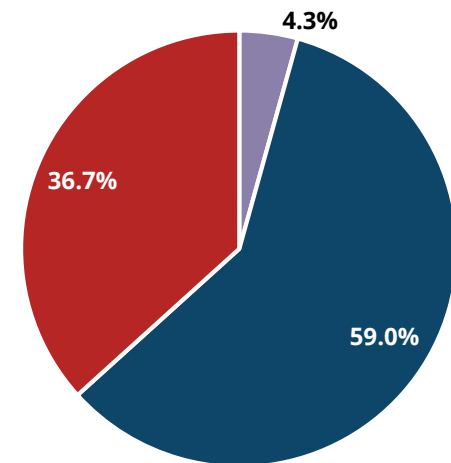
**Appendix B – Asset Information**

<i>Summary of Market Value of Assets</i>	<i>As of June 30, 2015</i>		<i>As of June 30, 2016</i>	
General investments				
Cash and Cash Equivalents	\$	251,987	\$	130,411
Fixed Income		679,811		1,107,933
Equities		711,827		1,780,215
Accrued Contributions		118,406		100,000
Accrued Benefit Payments		0		(871,210)
<b>Net assets</b>	<b>\$</b>	<b>1,762,031</b>	<b>\$</b>	<b>2,247,349</b>

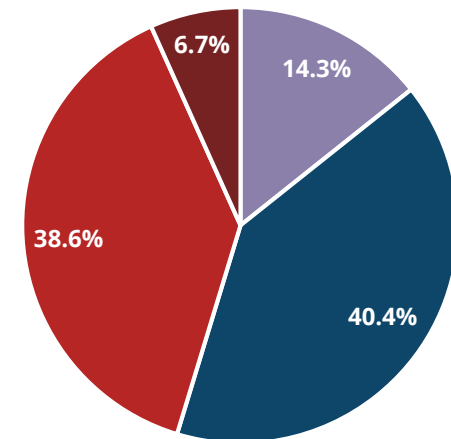
<i>Reconciliation of Assets</i>	<i>2014/15</i>		<i>2015/16</i>	
Market value of assets as of July 1	\$	581,200	\$	1,762,031

<b>Revenues</b>				
Employer contributions	\$	1,302,469	\$	1,450,643 <sup>1</sup>
Investment income		43,106		104,260
<b>Total</b>	<b>\$</b>	<b>1,345,575</b>	<b>\$</b>	<b>1,554,903</b>
<b>Expenditures</b>				
Benefit payments	\$	(278,450)	\$	(1,158,273) <sup>2</sup>
Trust expenses		(4,700)		(11,313)
<b>Total</b>	<b>\$</b>	<b>(283,150)</b>	<b>\$</b>	<b>(1,169,586)</b>
Market value of assets as of June 30	\$	1,643,625	\$	2,147,349
Accrued contribution		118,406 <sup>1</sup>		100,000
Final market value of assets as of June 30	\$	1,762,031	\$	2,247,349
Asset rate of return (net of expenses) <sup>3</sup>		3.5%		4.1%

**6/30/2016 Asset Breakdown<sup>4</sup>**



**6/30/2015 Asset Breakdown**



- Cash & Cash Equivalents
- Equities
- Fixed Incomes
- Accrued Contributions

<sup>1</sup> Reduced by \$118,406 accrued contribution which was allocated to FY 2014/15 but deposited in the Trust after June 30, 2015.

<sup>2</sup> Includes \$871,210 in accrued benefit payments allocated to FY 2015/16 but withdrawn from the Trust after June 30, 2016.

<sup>3</sup> For both fiscal years, the asset rate of return (net of expenses) are calculated using actual market value of assets as of June 30, 2015 (\$1,643,625).

<sup>4</sup> Asset breakdown as of June 30, 2016 is based on EOY balance shown in the trust statements (\$3,018,559) and excludes accrued contributions and benefit payments made after June 30, 2016.

**Appendix C – Detailed Actuary’s Notes**

There have not been any substantive plan provision changes since the last full valuation, which was for the fiscal year ending June 30, 2013.

Several actuarial assumptions have been updated since the last full valuation:

1. Mortality assumption has been updated from RP-2000 Combined Mortality Table fully generational using Scale AA to RP-2014 Mortality Table with blue collar adjustments and Social Security 2015 generational improvements from 2006. This change caused a slight decrease in the Town’s liabilities.
2. Disability rates have been updated to be consistent with the most recent MERS actuarial valuation for the fiscal year ending June 30, 2015. Comparison of the accidental disability rates used in the current valuation to the prior are as shown below. This change caused a slight decrease in the Town’s liabilities.

Age	Prior Valuation	Current Valuation
25	0.26%	0.17%
30	0.33%	0.22%
35	0.44%	0.29%
40	0.66%	0.44%
45	1.08%	0.72%
50+	1.82%	1.21%

3. Health Care Trend Rates have been updated for each benefit as shown below. The net impact of these changes caused an increase in the Town’s liabilities.
  - a. Medical / rx trend rates – 9.0% initial trend decreasing by 0.5% annually to an ultimate rate of 5.0%.
  - b. Dental trend rates – 4.5% initial trend decreasing by 0.25% annually to an ultimate rate of 3.0%.
  - c. Medicare Part B trend rates – 3.25% initial trend increasing by 0.25% annually to an ultimate rate of 4.25%.



## GLOSSARY

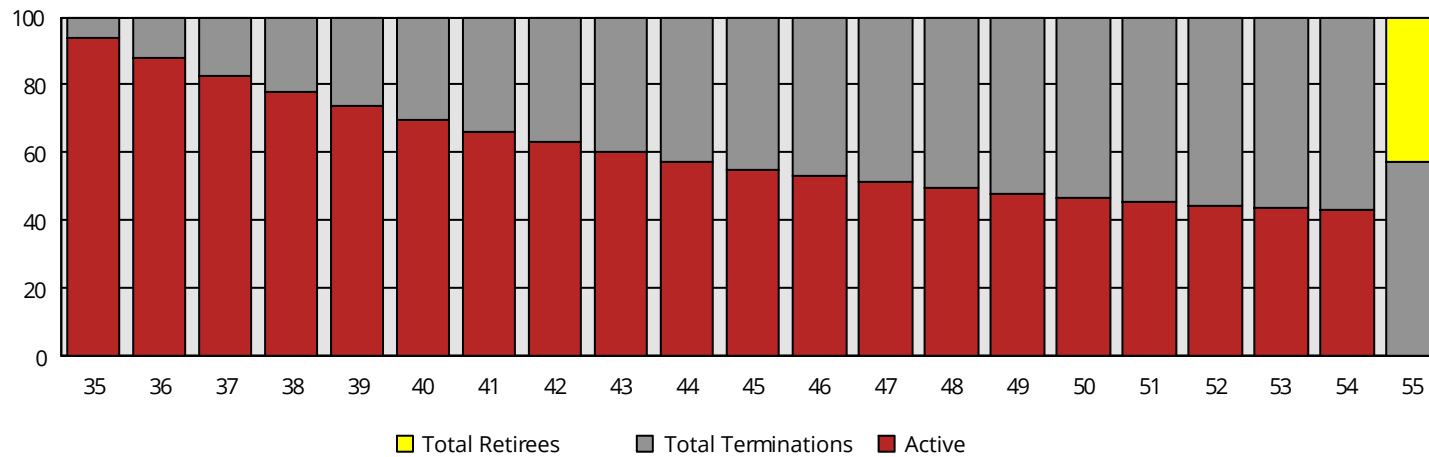
### Decrements Exhibit

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. Starting with 100 employees at age 35, the illustrated actuarial assumptions show that 42.949 employees out of the original 100 are expected to retire and could elect retiree health benefits at age 55.

Age	# Remaining Employees	# of Terminations per Year *	# of Retirements per Year *	Total Decrements
35	100.000	6.353	0.000	6.353
36	93.647	5.751	0.000	5.751
37	87.896	5.206	0.000	5.206
38	82.690	4.716	0.000	4.716
39	77.974	4.274	0.000	4.274
40	73.700	3.876	0.000	3.876
41	69.824	3.516	0.000	3.516
42	66.308	3.190	0.000	3.190
43	63.118	2.893	0.000	2.893
44	60.225	2.623	0.000	2.623
45	57.602	2.377	0.000	2.377

Age	# Remaining Employees	# of Terminations per Year *	# of Retirements per Year *	Total Decrements
46	55.225	2.147	0.000	2.147
47	53.078	1.931	0.000	1.931
48	51.147	1.724	0.000	1.724
49	49.423	1.524	0.000	1.524
50	47.899	1.329	0.000	1.329
51	46.570	1.151	0.000	1.151
52	45.419	0.977	0.000	0.977
53	44.442	0.818	0.000	0.818
54	43.624	0.675	0.000	0.675
55	42.949	0.000	42.949	42.949

Decrements Exhibit

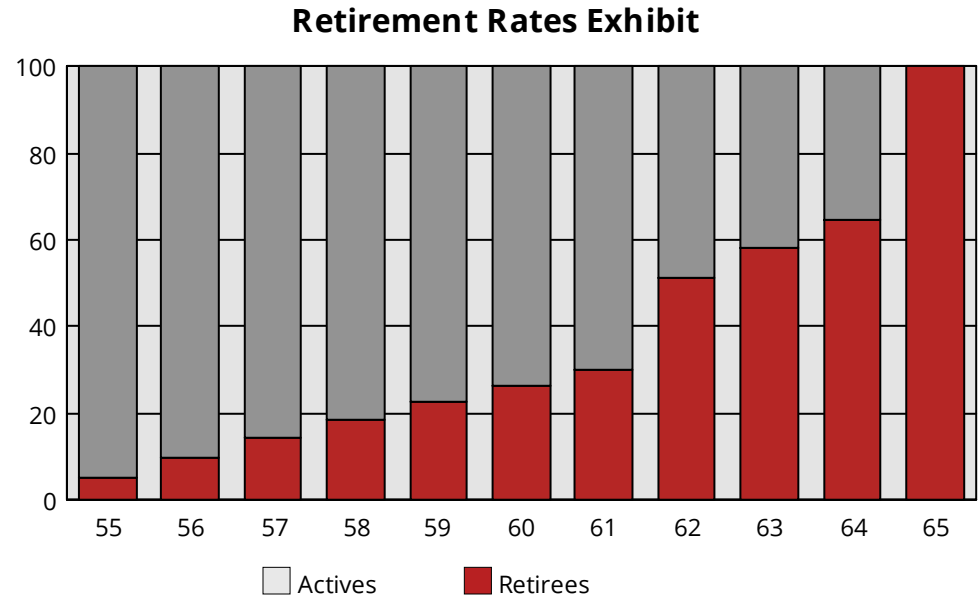


\* The above rates are illustrative and are not used in our GASB calculations.

### Retirement Rates Exhibit

The table below illustrates how actuarial assumptions can affect a long-term projection of future liabilities. The illustrated retirement rates show the number of employees who are assumed to retire annually based on 100 employees age 55 who are eligible for retiree health care coverage. The average age at retirement is 62.0.

Age	Active Employees BOY	Annual Retirement Rates *	# Retirements per year	Active Employees EOY
55	100.000	5.00%	5.000	95.000
56	95.000	5.00%	4.750	90.250
57	90.250	5.00%	4.513	85.738
58	85.738	5.00%	4.287	81.451
59	81.451	5.00%	4.073	77.378
60	77.378	5.00%	3.869	73.509
61	73.509	5.00%	3.675	69.834
62	69.834	30.00%	20.950	48.884
63	48.884	15.00%	7.333	41.551
64	41.551	15.00%	6.233	35.318
65	35.318	100.00%	35.318	0.000



\* The above rates are illustrative and are not used in our GASB calculations.

## Illustration of GASB Calculations

- I. Facts**
- A. The employer provides subsidized retiree health coverage worth \$100,000 to employees retiring at age 55 with 25 years of service. The employer funds the retiree health coverage on a pay-as-you-go basis.
  - B. Employee X is age 50 and has worked 20 years with the employer.
  - C. Retiree health subsidies are paid from the general fund assets which are expected to earn 4.5% per year on a long-term basis.
  - D. Based on Employee X's age and sex he has a 98.0% probability of living to age 55 and a 95.0% probability of continuing to work to age 55.

## II. Calculation of Present Value of Future Benefits

**Present Value of Future Benefits** represents the cost to finance benefits payable in the future to current and future retirees and beneficiaries, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.

	Value	Description
A.	\$100,000	Projected benefit at retirement
B.	80.2%	Interest discount for five years = $(1 / 1.045)^5$
C.	98.0%	Probability of living to retirement age
D.	95.0%	Probability of continuing to work to retirement age
E.	\$74,666	Present value of projected retirement benefit measured at employee's current age = $A \times B \times C \times D$

## Illustration of GASB Calculations (continued)

### III. Calculation of Actuarial Accrued Liability

**Actuarial Accrued Liability (AAL)** represents the portion of the Present Value of Future Benefits which has been accrued recognizing the employee's past service with the employer. The AAL is a required disclosure in the Required Supplementary Information section of the employer's financial statement.

	Value	Description
A.	\$74,666	Present value of projected retirement benefit measured at employee's current age
B.	20	Current years of service with employer
C.	25	Projected years of service with employer at retirement
D.	\$59,733	Actuarial accrued liability measured at employee's current age = $A \times B / C$

### IV. Calculation of Normal Cost

**Normal Cost** represents the portion of the Present Value of Future Benefits allocated to the current year.

	Value	Description
A.	\$74,666	Present value of projected retirement benefit measured at employee's current age
B.	25	Projected years of service with employer at retirement
C.	\$2,987	Normal cost measured at employee's current age = $A / B$

### V. Calculation of Annual Required Contribution

**Annual Required Contribution** is the total expense for the current year to be shown in the employer's income statement.

	Value	Description
A.	\$2,987	Normal Cost for the current year
B.	\$3,509	30-year amortization (level dollar method) of Unfunded AAL using a 4.5% interest rate discount factor
C.	\$292	Interest adjustment = $4.5\% \times (A + B)$
D.	\$6,788	Annual Required Contribution = $A + B + C$

## Definitions

GASB 45 defines several unique terms not commonly employed in the funding of pension and retiree health plans. The definitions of the terms used in the GASB actuarial valuations are noted below.

1. **Actuarial Accrued Liability** - That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of plan benefits and expenses which is not provided for by the future Normal Costs.
2. **Actuarial Assumptions** - Assumptions as to the occurrence of future events affecting health care costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided health care benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.
3. **Actuarial Cost Method** - A procedure for determining the Actuarial Present Value of future benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.
4. **Actuarial Present Value** - The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:
  - a) adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, Social Security, marital status, etc.);
  - b) multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned; and
  - c) discounted according to an assumed rate (or rates) of return to reflect the time value of money.
5. **Annual OPEB Cost** - An accrual-basis measure of the periodic cost of an employer's participation in a defined benefit OPEB plan.
6. **Annual Required Contribution (ARC)** - The employer's periodic required contributions to a defined benefit OPEB plan, calculated in accordance with the parameters.
7. **Explicit Subsidy** - The difference between (a) the amounts required to be contributed by the retirees based on the premium rates and (b) actual cash contribution made by the employer.
8. **Funded Ratio** - The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

**Definitions (continued)**

9. **Healthcare Cost Trend Rate** - The rate of change in the per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
10. **Implicit Subsidy** - In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group (which, because of the effect of age on claim costs, generally will be higher than the blended premium rates for all group members) and (b) the amounts required to be contributed by the retirees.
11. **Net OPEB Obligation** - The cumulative difference since the effective date of this Statement between annual OPEB cost and the employer's contributions to the plan, including the OPEB liability (asset) at transition, if any, and excluding (a) short-term differences and (b) unpaid contributions that have been converted to OPEB-related debt.
12. **Normal Cost** - The portion of the Actuarial Present Value of plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.
13. **Pay-as-you-go** - A method of financing a benefit plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
14. **Per Capita Costs** - The current cost of providing postretirement health care benefits for one year at each age from the youngest age to the oldest age at which plan participants are expected to receive benefits under the plan.
15. **Present Value of Future Benefits** - Total projected benefits include all benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members) as a result of their service through the valuation date and their expected future service. The actuarial present value of total projected benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment. Expressed another way, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay total projected benefits when due.
16. **Select and Ultimate Rates** - Actuarial assumptions that contemplate different rates for successive years. Instead of a single assumed rate with respect to, for example, the investment return assumption, the actuary may apply different rates for the early years of a projection and a single rate for all subsequent years. For example, if an actuary applies an assumed investment return of 8% for year 20W0, then 7.5% for 20W1, and 7% for 20W2 and thereafter, then 8% and 7.5% select rates, and 7% is the ultimate rate.
17. **Substantive Plan** - The terms of an OPEB plan as understood by the employer(s) and plan members.