



nyhart

***City of Lapeer***  
*GASB 45 Actuarial Valuation*  
*As of July 1, 2013*

***Prepared by:***

***Nyhart***

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## Table of Contents

	Page
Certification	1
Actuary's Notes	2
Executive Summary	3
GASB Disclosures	
Development of Annual Required Contribution (ARC)	6
Development of Annual OPEB Cost and Net OPEB Obligation	7
Schedule of Funding Progress	8
Schedule of Employer Contributions	8
Historical Annual OPEB Cost	8
Reconciliation of Actuarial Accrued Liability (AAL)	9
Asset Information	10
Employer Contribution Cash Flow Projections	11
Substantive Plan Provisions	12
Actuarial Methods and Assumptions	14
Summary of Plan Participants	19
Appendix	20
Projection of GASB Results	21
Comparison of Participant Demographic Information	23
Glossary	24
Decrements Exhibit	25
Retirement Rates Exhibit	26
Illustrations of GASB Calculations	27
Definitions	29

May 22, 2015

Tracey Russell  
City of Lapeer  
576 Liberty Park  
Lapeer, MI 48446

This report summarizes the GASB actuarial valuation for City of Lapeer as of July 1, 2013. 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 valuation is also based upon our understanding of the plan provisions as summarized within the report.

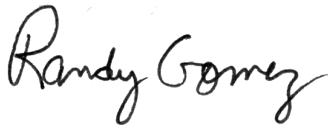
The information presented herein is based on the information furnished to us by the Plan Sponsor that has been reconciled and reviewed for reasonableness. We are not aware of any material inadequacy in employee census provided by the Plan Sponsor. We have not audited the information at the source, and therefore do not accept responsibility for the accuracy or the completeness of the data on which the information is based.

The actuarial assumptions were 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 computations have been made in accordance with generally accepted actuarial principles and practice.

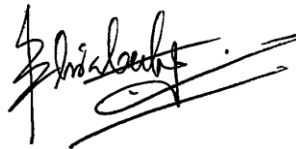
To our knowledge, there have been no significant events prior to the current year's measurement date or as of the date of this report that could materially affect the results contained herein.

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.

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



Randy Gomez, FSA, MAAA  
Consulting Actuary



Evi Laksana, ASA, MAAA  
Valuation Actuary

Several actuarial assumptions have been updated since the last valuation, which was as of December 31, 2009:

1. Mortality table has been updated as follows:
  - a. Healthy retirees: From (a) 1994 Group Annuity Mortality tables blended 50% male/50% female to (b) RP-2000 Combined Mortality Table fully generational using scale AA.
  - b. Disabled retirees – from (a) 1994 Group Annuity Mortality Tables blended 50% male/50% female set forward ten years to (b) RP-2000 Combined Mortality Table projected to 2020 using scale AA set forward ten years.This change increased the City's liabilities.
2. Retirement rates and payroll growth have been updated to be consistent with the assumptions used in the Michigan Employees Retirement System actuarial valuation as of December 31, 2011. Net impact of both changes is an increase in the City's liabilities.
3. Medical trend rates have been reset to an initial rate of 9.0% decreasing by 0.5% annually to an ultimate rate of 5.0% while dental trend rates have been reduced from a constant 4.5% to 3.0%. The net impact of trend changes is an increase in liabilities.
4. Percentage of employees electing spousal coverage has been changed from 70% to 80% for male employees and 50% for female employees. This caused an increase in liabilities.
5. Amortization method for all employee groups has been changed to a level dollar. The amortization period as of June 30, 2014 is 30 years, which will decrease by one year each year.

## Summary of Results

Presented below is the summary of GASB 45 results for the fiscal year ending June 30, 2014 compared to the prior fiscal year.

	<i>As of July 1, 2012<sup>1</sup></i>		<i>As of July 1, 2013</i>	
<b>Actuarial Accrued Liability</b>	\$	20,487,648	\$	22,483,987
<b>Actuarial Value of Assets</b>	\$	481,470	\$	791,043
<b>Unfunded Actuarial Accrued Liability</b>	\$	20,006,178	\$	21,692,944
<b>Funded Ratio</b>		2.4%		3.5%

	<i>FY 2012/13</i>		<i>FY 2013/14</i>	
<b>Annual Required Contribution</b>	\$	1,891,185 <sup>2</sup>	\$	2,010,749
<b>Annual OPEB Cost</b>	\$	1,827,818	\$	1,931,228
<b>Annual Employer Contribution</b>	\$	550,633	\$	610,270

	<i>As of June 30, 2013</i>		<i>As of June 30, 2014</i>	
<b>Net OPEB Obligation</b>	\$	6,286,825	\$	7,607,783

	<i>As of December 31, 2009</i>		<i>As of July 1, 2013</i>	
<b>Active Participants</b>		80		64
<b>Total Retiree Participants</b>		39		45

The active participants' number above 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.

<sup>1</sup> Actuarial Accrued Liability as of July 1, 2012 is based on the actuarial valuation report as of December 31, 2009. The Actuarial Value of Assets (AVA) shown is the actual OPEB Trust asset balance as of July 1, 2012. Note that this AVA is different from the asset used to calculate the Annual Required Contribution (ARC) in the December 31, 2009 actuarial valuation report.

<sup>2</sup> FY 2012/13 ARC is based on the actuarial valuation report as of December 31, 2009 projected to FY 2012/13.

Below is a breakdown of total GASB 45 liabilities allocated to past, current, and future service as of July 1, 2013.

<i>As of July 1, 2013</i>	
<b>Present Value of Future Benefits</b>	<b>\$ 26,157,823</b>
Active Employees	16,630,129
Retired Employees	9,527,694
<b>Actuarial Accrued Liability</b>	<b>\$ 22,483,987</b>
Active Employees	12,956,293
Retired Employees	9,527,694
<b>Normal Cost</b>	<b>\$ 410,170</b>
<b>Future Normal Cost</b>	<b>\$ 3,263,666</b>

**Present Value of Future Benefits** is the amount needed as of July 1, 2013 to fully fund the City’s retiree health care subsidies for existing and future retirees and their dependents assuming all actuarial assumptions are met.

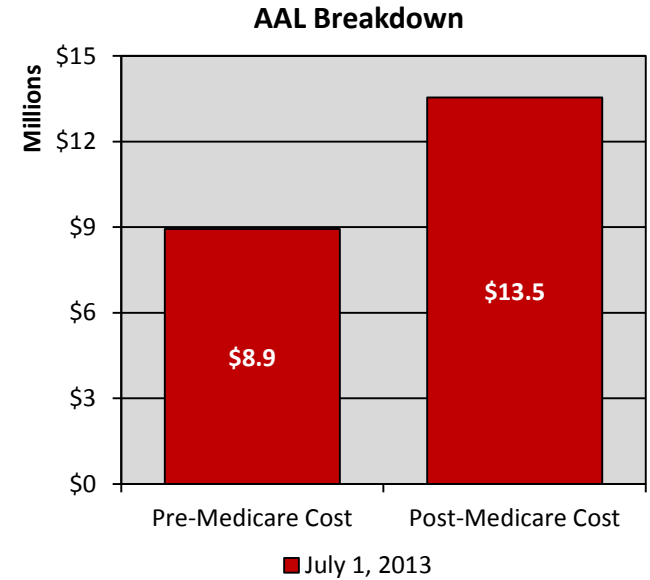
**Actuarial Accrued Liability** is the portion of PVFB considered to be accrued or earned as of July 1, 2013. This amount is a required disclosure in the Required Supplementary Information section.

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

**Future Normal Cost** is the portion of the total liability amount that is attributed to the future employee service by the current year’s valuation by the actuarial cost method.

Below is a breakdown of total GASB 45 Actuarial Accrued Liability (AAL) allocated to 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, 2013	
Active Pre-Medicare	\$	6,398,316
Active Post-Medicare		6,557,977
<b>Total Active AAL</b>	<b>\$</b>	<b>12,956,293</b>
Retirees Pre-Medicare	\$	2,539,933
Retirees Post-Medicare		6,987,761
<b>Total Retirees AAL</b>	<b>\$</b>	<b>9,527,694</b>
<b>Total AAL</b>	<b>\$</b>	<b>22,483,987</b>



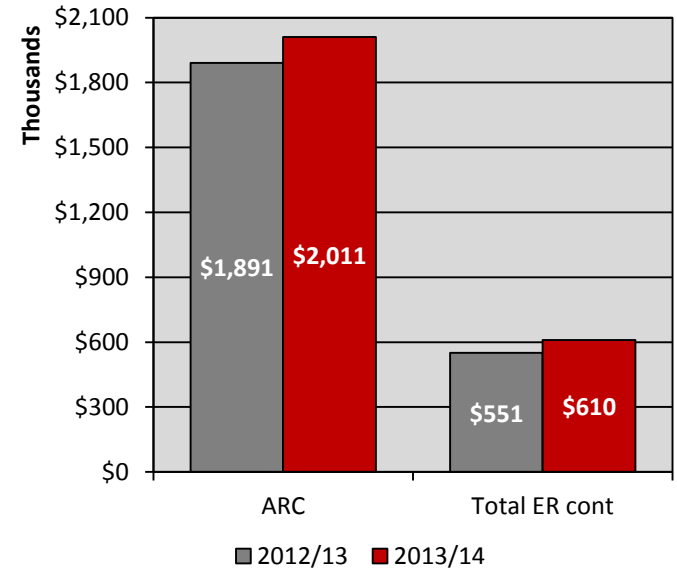
### Development of Annual Required Contribution (ARC)

Required Supplementary Information	As of July 1, 2012	As of July 1, 2013
Actuarial Accrued Liability as of beginning of year	\$ 20,487,648 <sup>3</sup>	\$ 22,483,987
Actuarial Value of Assets as of beginning of year	481,470	791,043
<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	<b>\$ 20,006,178</b>	<b>\$ 21,692,944</b>
Funded ratio	2.4%	3.5%
Covered payroll <sup>4</sup>	\$ N/A	\$ 3,673,683
UAAL as a % of covered payroll	N/A	590.5%

Annual Required Contribution	FY 2012/13 <sup>5</sup>	FY 2013/14
Actuarial Accrued Liability as of beginning of year	\$ 20,487,648	\$ 22,483,987
Actuarial Value of Assets as of beginning of year	434,923	791,043
Unfunded Actuarial Accrued Liability (UAAL)	\$ 20,052,725	\$ 21,692,944
Normal cost as of beginning of year	\$ N/A	\$ 410,170
Amortization of the UAAL	N/A	1,486,763
Total normal cost and amortization payment	\$ N/A	\$ 1,896,933
Interest to end of year	N/A	113,816
<b>Total Annual Required Contribution (ARC)</b>	<b>\$ 1,891,185</b>	<b>\$ 2,010,749</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.

<sup>3</sup> Actuarial Accrued Liability as of July 1, 2012 is based on the actuarial valuation report as of December 31, 2009.

<sup>4</sup> FY 2013/14 covered payroll is for active employees who are eligible for retiree health benefits only.

<sup>5</sup> FY 2012/13 Annual Required Contribution (ARC) is based on the actuarial valuation report as of December 31, 2009 projected to FY 2012/13. The \$434,923 Actuarial Value of Asset shown above is the actual OPEB Trust balance as of December 31, 2009 used for the ARC development.



## Development of Annual OPEB Cost and Net OPEB Obligation

<b>Net OPEB Obligation (NOO)</b>	<b>FY 2012/13</b>		<b>FY 2013/14</b>	
ARC as of end of year	\$	1,891,185	\$	2,010,749
Interest on NOO to end of year		300,578		377,210
NOO amortization adjustment to the ARC		(363,945)		(456,731)
Annual OPEB cost	\$	1,827,818	\$	1,931,228
Annual employer contribution for pay-go cost <sup>6</sup>		(550,633)		(610,270)
Annual employer contribution for pre-funding		N/A		N/A
Change in NOO	\$	1,277,185	\$	1,320,958
NOO as of beginning of year		5,009,640		6,286,825
<b>NOO as of end of year</b>	<b>\$</b>	<b>6,286,825</b>	<b>\$</b>	<b>7,607,783</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 OPB 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.

<sup>6</sup> Includes pre-funding contributions made by the City.

## Summary of GASB 45 Financial Results

Presented below is the summary of GASB 45 results for the fiscal year ending June 30, 2014 and prior fiscal years.

### Schedule of Funding Progress

<i>As of</i>	<i>Actuarial Accrued Liability (AAL)</i>	<i>Actuarial Value of Assets (AVA)</i>	<i>Unfunded Actuarial Accrued Liability (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, 2013	\$ 22,483,987	\$ 791,043	\$ 21,692,944	3.5%	\$ 3,673,683	590.5%
July 1, 2012	\$ 20,487,648	\$ 481,470 <sup>7</sup>	\$ 20,006,178	2.4%	N/A	N/A
July 1, 2011	\$ 20,487,648	\$ 267,987 <sup>7</sup>	\$ 20,219,661	1.3%	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, 2014	\$ 610,270	\$ 2,010,749	30.4%
June 30, 2013	\$ 550,633	\$ 1,891,185	29.1%
June 30, 2012	\$ 615,361	\$ 1,872,104	32.9%

### 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, 2014	\$ 1,931,228	31.6%	\$ 7,607,783
June 30, 2013	\$ 1,827,818	30.1%	\$ 6,286,825
June 30, 2012	\$ 1,824,026	33.7%	\$ 5,009,640

<sup>7</sup> Actual OPEB Trust balance as of July 1, 2011 and July 1, 2012.

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.

	2013/14		2014/15		2015/16	
Actuarial Accrued Liability as of beginning of year	\$	22,483,987	\$	23,600,698	\$	24,738,359
Normal cost as of beginning of year		410,170		434,780		460,867
Expected benefit payments during the year		(647,953)		(718,021)		(783,981)
Interest adjustment to end of year		1,354,494		1,420,902		1,488,777
Expected Actuarial Accrued Liability as of end of year <sup>8</sup>	\$	23,600,698	\$	24,738,359	\$	25,904,022
Actuarial (gain) / loss due to experience		TBD		TBD		TBD
Actuarial (gain) / loss due to provisions / assumptions changes		TBD		TBD		TBD
Actual Actuarial Accrued Liability as of end of year	\$	TBD	\$	TBD	\$	TBD

**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.

<sup>8</sup> Actuarial Accrued Liability (AAL) as of beginning of year was projected to the end of the year on a “no gain/loss” basis. The actual AAL as of end of year may be higher or lower depending on actual plan experience.

Asset Information

All assets are currently held in the Municipal Employees' Retirement System (MERS) Total Market Fund, which is a fully diversified portfolio combining traditional stocks and bonds with alternative asset classes including real estate, private equity, and commodities.

Reconciliation of Market Value of Assets	Actual FY 2012/13	Projected FY 2013/14	Projected FY 2014/15
Market value of assets as of July 1	\$ 481,470	\$ 791,043	\$ 900,941
<b>Revenues</b>			
Employer contributions <sup>9</sup>	\$ 557,458	\$ 610,270	\$ 697,008
Investment income <sup>10</sup>	109,324	67,297	76,749
Total	\$ 666,782	\$ 677,567	\$ 773,757
<b>Expenditures</b>			
Benefit payments <sup>11</sup>	\$ (357,209)	\$ (567,669)	\$ (647,008)
Total	\$ (357,209)	\$ (567,669)	\$ (647,008)
Market value of assets as of June 30	\$ 791,043	\$ 900,941	\$ 1,027,690

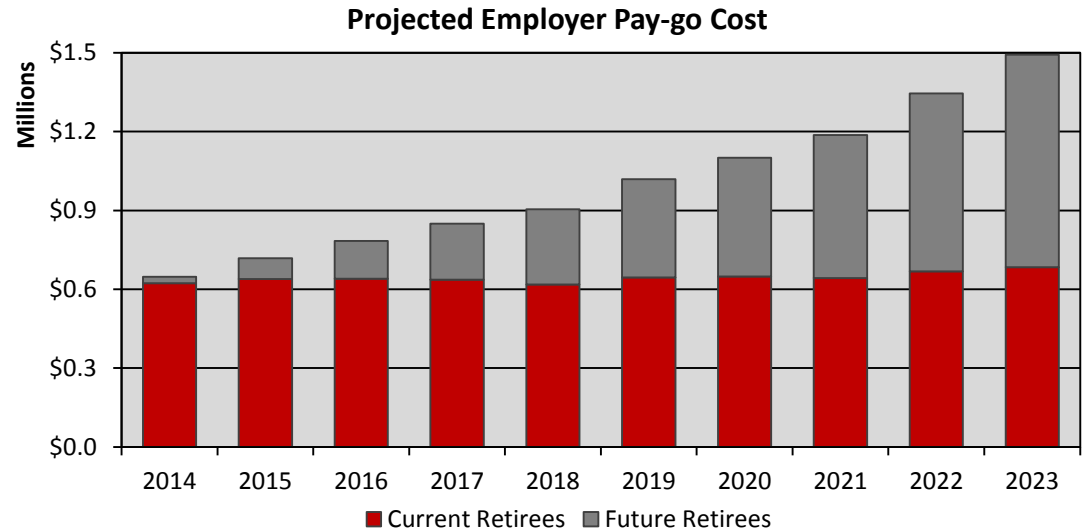
<sup>9</sup> The \$610,270 employer contribution shown for FY 2013/14 was already deposited in the OPEB Trust Fund. Based on historical information, the City typically makes a one-time contribution at the beginning of the fiscal year so we have assumed that no additional contribution will be made for FY 2013/14. FY 2014/15 employer contribution is estimated based on (a) the expected pay-go cost of \$647,008 that excludes the implicit portion of the pay-go cost plus (b) \$50,000 in pre-funding contribution based on the City's pre-funding policy.

<sup>10</sup> Investment income is based on an expected 6% asset return assumption. For the purpose of investment income calculation, employer contribution is assumed to be made at the beginning of the fiscal year while the benefit payments are made throughout the fiscal year.

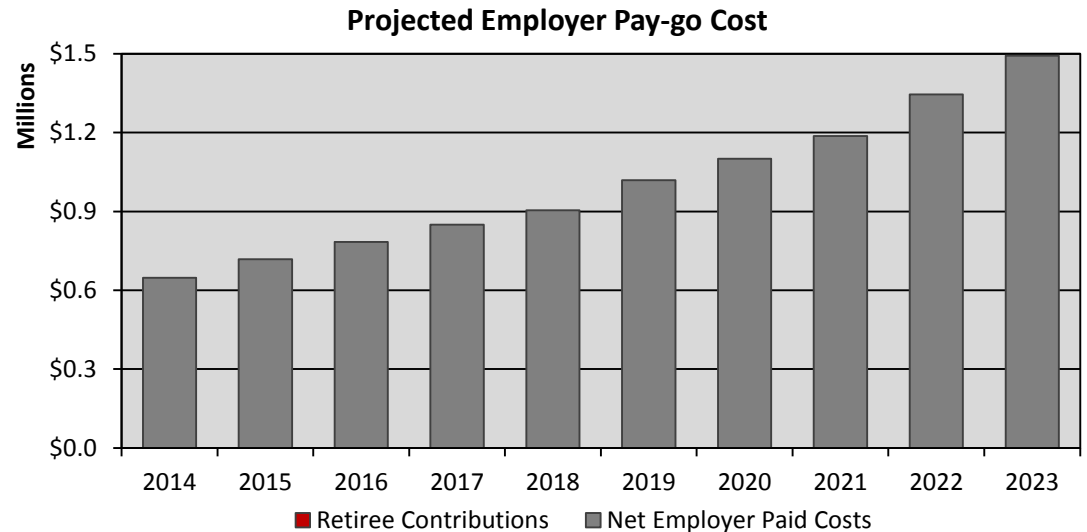
<sup>11</sup> FY 2012/13 benefit payment shown is an actual amount. All other fiscal years benefit payments shown are estimated.

The below projections show the actuarially estimated employer-paid contributions for retiree health benefits for the next ten years. Results are shown separately for current /future retirees and gross claim costs/retiree contributions. These projections include explicit and implicit subsidies.

FYE	Current Retirees	Future Retirees <sup>12</sup>	Total
2014	\$ 622,715	\$ 25,238	\$ 647,953
2015	\$ 638,713	\$ 79,308	\$ 718,021
2016	\$ 640,492	\$ 143,489	\$ 783,981
2017	\$ 636,563	\$ 213,480	\$ 850,043
2018	\$ 618,204	\$ 286,306	\$ 904,510
2019	\$ 644,945	\$ 373,456	\$ 1,018,401
2020	\$ 649,346	\$ 451,227	\$ 1,100,573
2021	\$ 642,142	\$ 545,036	\$ 1,187,178
2022	\$ 668,389	\$ 676,526	\$ 1,344,915
2023	\$ 684,539	\$ 807,462	\$ 1,492,001



FYE	Estimated Claims Costs	Retiree Contributions	Net Employer-Paid Costs
2014	\$ 647,953	\$ 0	\$ 647,953
2015	\$ 718,021	\$ 0	\$ 718,021
2016	\$ 783,981	\$ 0	\$ 783,981
2017	\$ 850,043	\$ 0	\$ 850,043
2018	\$ 904,510	\$ 0	\$ 904,510
2019	\$ 1,018,401	\$ 0	\$ 1,018,401
2020	\$ 1,100,573	\$ 0	\$ 1,100,573
2021	\$ 1,187,178	\$ 0	\$ 1,187,178
2022	\$ 1,344,915	\$ 0	\$ 1,344,915
2023	\$ 1,492,001	\$ 0	\$ 1,492,001



<sup>12</sup> Projections for future retirees do not take into account future new hires.

**Eligibility**

The following employee groups are eligible for lifetime retiree health benefits:

1. AFSCME, POLC, and Teamsters employees hired on or prior to July 1, 2007
2. All TPOAM and Non-Union employees

To be eligible for retiree health benefits, employees must retire from the City. All employees are members of Michigan Employees Retirement System (MERS) and the retirement eligibility requirements under MERS are as follows:

1. Police officers and City Manager – earlier of:
  - a. Age 55 with 15 years of service (early reduced benefit)
  - b. Age 50 with 25 years of service
  - c. Age 60 with 10 years of service
2. AFSCME and Teamsters – earlier of:
  - a. Age 50 with 25 years of service (early reduced benefit)
  - b. Age 55 with 15 years of service (early reduced benefit)
  - c. Age 55 with 25 years of service
  - d. Age 60 with 10 years of service
3. TPOAM and Non-Union employees – earlier of:
  - a. Age 50 with 25 years of service (early reduced benefit)
  - b. Age 55 with 15 years of service (early reduced benefit)
  - c. Age 55 with 25 years of service
  - d. Age 60 with 6 years of service

**Disability**

Employees qualify for disability benefit without any age or years of service requirement if they become disabled in the line of duty. Otherwise, employees must be vested to be eligible for disability benefit (ie. six years of service required for TPOAM and Non-Union employees and ten years of service required for all other employees).

**Spouse Benefit**

Retiree health care coverage continues to surviving spouse upon death of retirees or active employees (regardless of whether the employees have met retirement eligibility requirements or not). If the employee dies in the line of duty, there is age or years of service requirement to qualify for the death benefit. Otherwise, employees must be vested to qualify for death benefit (ie. six years of service required for TPOAM and Non-Union employees and ten years of service required for all other employees).

**Retiree Cost Sharing**

Retiree health coverage is non-contributory for all benefits (medical, dental, and vision).

**Explicit Subsidy**

The City pays the full cost of coverage.

**Medical Benefit**

All health plans are fully-insured and partially experience rated. The monthly retiree premiums by plan effective on January 1, 2014 are as shown below.

	Medical		Dental / Vision	
	1 Person	2 Persons	1 Person	2 Persons
Under 65	\$ 711.52	\$ 1,724.08	\$ 41.09	\$ 82.18
Over 65	\$ 457.29	\$ 847.58	\$ 41.09	\$ 82.18

The actuarial assumptions used in this report represent a reasonable long-term expectation of future OPEB outcomes. As national economic and City’s 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 as of December 31, 2009. Refer to Actuary’s Notes section for complete information on these changes. For the current year GASB valuation, we have also updated the per capita costs. We expect to update health care trend rates and per capita costs again in the next full GASB valuation, which will be as of July 1, 2016.

**Measurement Date** July 1, 2013

**Discount Rate** 6.0% partially funded

**Payroll Growth** Sample annual payroll growth is as shown below:

Age	Merit & Seniority	Base (Economic)*	Total
20	13.0%	4.5%	17.5%
25	6.8%	4.5%	11.3%
30	3.3%	4.5%	7.8%
35	2.1%	4.5%	6.6%
40	1.3%	4.5%	5.8%
45	0.8%	4.5%	5.3%
50	0.5%	4.5%	5.0%
55	0.3%	4.5%	4.8%

\* The base (economic) payroll growth is assumed to be 1.0% for CY 2013 and 2014.

**Inflation Rate** 3.0% per year

**Cost Method** Entry Age Normal Level % of Pay

**Asset Method** Fair Market Value of Assets

**Amortization** Level dollar over thirty years based on a closed group; the remaining amortization period as of June 30, 2014 is 30 years.



**Census Data** Census information was provided by the City as of October 2013. We have reviewed it for reasonableness and no material modifications were made to the census data.

**Health Care Coverage Election Rate** Active employees with current coverage: 100%  
Active employees with no coverage: 100%

Inactive employees with current coverage: 100%  
Inactive employees with no coverage: 0%

Coverage level for dental and vision benefits is assumed to follow medical coverage level elected for all participants.

**Spousal Coverage** Spousal coverage and ages for current retirees is based on actual data.

80% of male and 50% of female employees is assumed to be married at retirement. Husbands are assumed to be three years older than wives.

**Employer Funding Policy** Pay-as-you-go cash basis plus \$50,000

**Mortality** Healthy retirees: RP-2000 Combined Mortality Table fully generational using scale AA  
Disabled retirees: RP-2000 Combined Mortality Table projected to 2020 using scale AA set forward 10 years

**Disability** Sample annual rates shown below are based on the Michigan MERS actuarial valuation as of December 31, 2011. 15% of disability is assumed to be duty related.

Age	Rates
20	0.02%
25	0.02%
30	0.02%
35	0.06%
40	0.06%
45	0.11%
50	0.24%
55	0.41%

**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.

Sample annual rates shown below are based on the Michigan MERS actuarial valuation as of December 31, 2011.

<b>YOS</b>	<b>Rates</b>	<b>YOS</b>	<b>Rates</b>
0	20.0%	10	5.0%
1	17.0%	15	3.7%
2	14.0%	20	3.0%
3	11.0%	25	2.7%
4	9.0%	30	2.6%
5	6.5%	35+	2.4%

**Retirement Rate**

Annual rates of retirement are based on the Michigan MERS actuarial valuation as of December 31, 2011.

<b>Age</b>	<b>Normal Retirement</b>	<b>Age</b>	<b>Reduced Pension</b>
50 – 56	20%	50 – 51	1.60%
57 – 60	21%	52	2.30%
61 – 63	22%	53	3.30%
64	23%	54	4.50%
65 – 66	25%	55	3.50%
67	26%	56	3.25%
68	28%	57	3.00%
69	30%	58	4.50%
70+	100%	59	5.75%

**Health Care Trend Rates**

FYE	Medical	FYE	Medical
2014	9.0%	2019	6.5%
2015	8.5%	2020	6.0%
2016	8.0%	2021	5.5%
2017	7.5%	2022+	5.0%
2018	7.0%		

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.

Dental and vision trend rate is assumed to be 3.0% annually.

**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 City’s monthly retiree premium rates effective on January 1, 2014 actuarially increased using health index factors and current enrollment. The costs are assumed to increase with health care trend rates. Annual per capita costs by plan are as shown below:

Age	Male	Female
50 – 54	\$ 8,700	\$ 10,300
55 – 59	\$ 11,800	\$ 11,400
60 – 64	\$ 15,100	\$ 13,500
65 – 69	\$ 4,400	\$ 4,400
70 – 74	\$ 5,200	\$ 5,200
75+	\$ 6,000	\$ 6,000

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 dental and vision per capita cost is \$493 and it is assumed to increase 4.5% annually.

**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 retiree under age 65 without dental and vision benefits.

	Premium Rate	Retiree Contribution	Explicit Subsidy
	A	B	C = A – B
Retiree	\$ 711.52	\$ 0.00	\$ 711.52
Spouse	\$ 1,012.56	\$ 0.00	\$ 1,012.56

**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 60 – 64 male retiree with spouse of the same age without dental and vision benefits.

	<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	\$ 1,258.33	\$ 711.52	\$ 546.81
Spouse	\$ 1,125.00	\$ 1,012.56	\$ 112.44

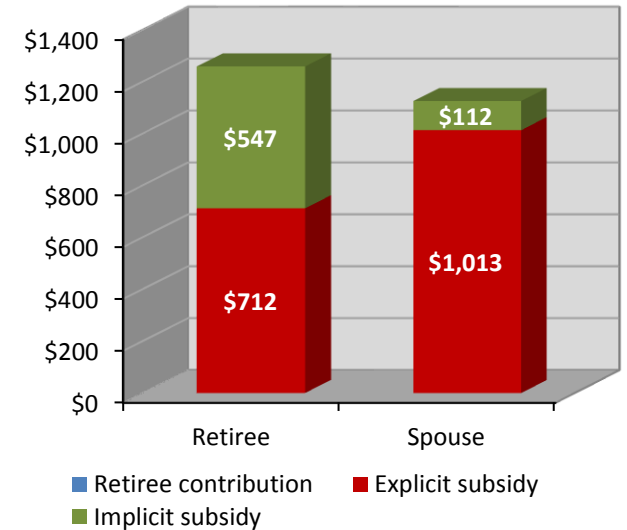
All employers that utilize premium rates based on blended active/retiree claims experience will have an implicit subsidy. There is an exception for plans using a true community-rated premium rate.

**GASB Subsidy Breakdown**

Below is a breakdown of the GASB 45 monthly total cost for a male 60 – 64 retiree and his spouse of the same age without dental and vision benefits.

	<b>Retiree</b>	<b>Spouse</b>
Retiree contribution	\$ 0.00	\$ 0.00
Explicit subsidy	\$ 711.52	\$ 1,012.56
Implicit subsidy	\$ 546.81	\$ 112.44
<b>Total monthly cost</b>	<b>\$ 1,258.33</b>	<b>\$ 1,125.00</b>

**GASB Subsidy Breakdown**



<i>Actives eligible for retiree health benefits<sup>13</sup></i>	<i>Single</i>	<i>Non-Single</i>	<i>Total</i>	<i>Avg. Age</i>	<i>Avg. Svc</i>	<i>Salary</i>
With coverage	16	46	62	46.6	15.7	\$ 3,564,500
Without coverage <sup>14</sup>			2	47.3	9.1	\$ 109,183

**Active Age-Service Distribution**

Includes active employees eligible for retiree health benefits only.

<i>Age</i>	<i>Years of Service</i>										<i>Total</i>
	<i>&lt; 1</i>	<i>1 to 4</i>	<i>5 to 9</i>	<i>10 to 14</i>	<i>15 to 19</i>	<i>20 to 24</i>	<i>25 to 29</i>	<i>30 to 34</i>	<i>35 to 39</i>	<i>40 &amp; up</i>	
Under 25											0
25 to 29		1									1
30 to 34			2	2							4
35 to 39	1		2	4	2						9
40 to 44	1		3	5	2						11
45 to 49	2		3		4	4	1				14
50 to 54			2	4	7	1	5				19
55 to 59						1	1	2	1		5
60 to 64								1			1
65 to 69											0
70 & up											0
<b>Total</b>	<b>4</b>	<b>1</b>	<b>12</b>	<b>15</b>	<b>15</b>	<b>6</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>64</b>

<i>Retirees with coverage</i>	<i>Single</i>	<i>Non-Single</i>	<i>Total</i>	<i>Avg. Age</i>
<b>Total retirees with coverage</b>	<b>20</b>	<b>25</b>	<b>45</b>	<b>69.3</b>

<sup>13</sup> Additionally there are seven active employees that are not eligible for retiree health benefits.

<sup>14</sup> Active employees without coverage are assumed to elect coverage at retirement. They have been included in the GASB valuation.

**APPENDIX**

## Projection of GASB Results

**FY 2014/15 and 2015/16 Actuarial Accrued Liability (AAL) has been actuarially projected from July 1, 2013 to July 1, 2014 and 2015 on a “no gain/loss” basis as shown in the Reconciliation of Actuarial Accrued Liability section. The actual AAL may be higher or lower depending on the actual plan experience. Annual Required Contributions were calculated using estimated Actuarial Value of Assets as projected in the Asset Information section.**

Required Supplementary Information	FY 2013/14	FY 2014/15	FY 2015/16
Actuarial Accrued Liability as of beginning of year	\$ 22,483,987	\$ 23,600,698	\$ 24,738,359
Actuarial Value of Assets as of beginning of year	791,043	900,941	1,027,690
<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	<b>\$ 21,692,944</b>	<b>\$ 22,699,757</b>	<b>\$ 23,710,669</b>
Funded ratio	3.5%	3.8%	4.2%
Covered payroll <sup>15</sup>	\$ 3,673,683	\$ 3,838,999	\$ 4,011,754
UAAL as a % of covered payroll	590.5%	591.3%	591.0%

Annual Required Contribution	FY 2013/14	FY 2014/15	FY 2015/16
Normal cost as of beginning of year	\$ 410,170	\$ 434,780	\$ 460,867
Amortization of the UAAL	1,486,763	1,575,697	1,668,528
Total normal cost and amortization payment	\$ 1,896,933	\$ 2,010,477	\$ 2,129,395
Interest to end of year	113,816	120,629	127,764
<b>Total Annual Required Contribution (ARC)</b>	<b>\$ 2,010,749</b>	<b>\$ 2,131,106</b>	<b>\$ 2,257,159</b>

<sup>15</sup> Covered payroll is increased annually by the payroll growth assumption (4.5%).

**Projection of GASB Results (Continued)**

**Net OPEB Obligation balance as of the end of 2013/14 and 2014/15 fiscal years will be updated once the actual employer contributions are available.**

<b>Net OPEB Obligation</b>	<b>FY 2013/14</b>	<b>FY 2014/15</b>	<b>FY 2015/16</b>
ARC as of end of year	\$ 2,010,749	\$ 2,131,106	\$ 2,257,159
Interest on NOO to end of year	377,210	456,467	536,314
NOO amortization adjustment to the ARC	\$ (456,731)	\$ (559,778)	\$ (666,751)
Annual OPEB cost	1,931,228	2,027,795	2,126,722
Annual employer contribution for pay-go cost	\$ (610,270) <sup>16</sup>	\$ (647,008)	\$ (723,453)
Annual employer contribution for pre-funding	N/A	(50,000)	(50,000)
Change in NOO	\$ 1,320,958	\$ 1,330,787	\$ 1,353,269
NOO as of beginning of year	6,286,825	7,607,783	8,938,570
<b>NOO as of end of year</b>	<b>\$ 7,607,783</b>	<b>\$ 8,938,570</b>	<b>\$ 10,291,839</b>

<sup>16</sup> Includes pre-funding contributions made by the City.



## 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 December 31, 2009</i>	<i>As of July 1, 2013</i>
Active Participants	80	64
Retired Participants	39	45
Averages for Active		
Age	44.2	46.6
Service	132	15.5
Averages for Inactive		
Age	N/A	69.3

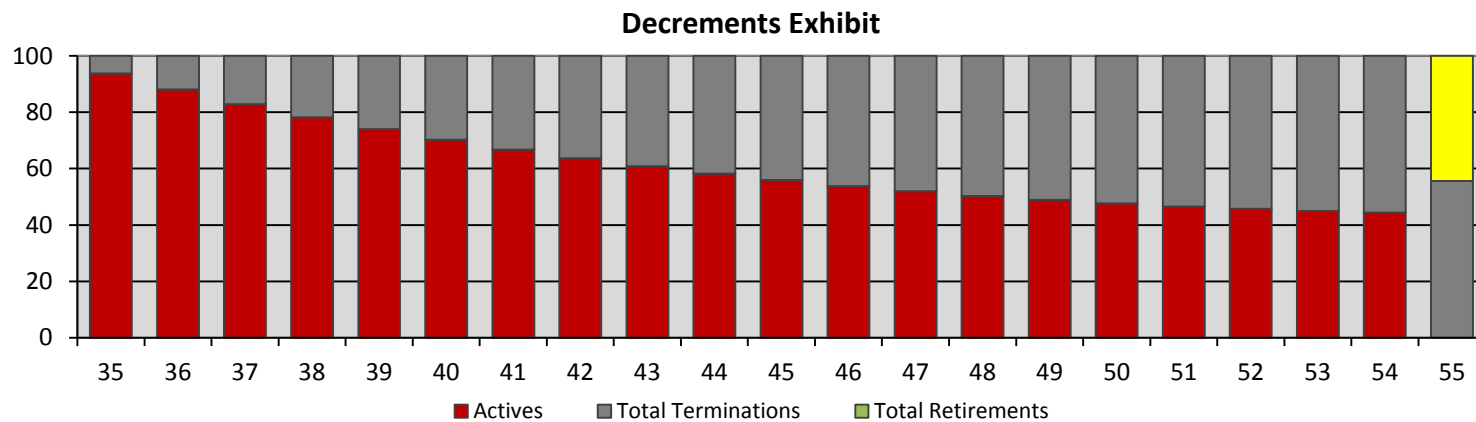
## Glossary

### 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 44.430 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	6.276	0.000	6.276
36	93.724	5.677	0.000	5.677
37	88.047	5.136	0.000	5.136
38	82.911	4.648	0.000	4.648
39	78.262	4.209	0.000	4.209
40	74.053	3.814	0.000	3.814
41	70.239	3.456	0.000	3.456
42	66.783	3.131	0.000	3.131
43	63.652	2.835	0.000	2.835
44	60.817	2.564	0.000	2.564
45	58.253	2.316	0.000	2.316

Age	# Remaining Employees	# of Terminations per Year*	# of Retirements per Year*	Total Decrements
46	55.938	2.085	0.000	2.085
47	53.853	1.866	0.000	1.866
48	51.987	1.656	0.000	1.656
49	50.331	1.452	0.000	1.452
50	48.880	1.253	0.000	1.253
51	47.627	1.060	0.000	1.060
52	46.567	0.877	0.000	0.877
53	45.690	0.707	0.000	0.707
54	44.983	0.553	0.000	0.553
55	44.430	0.000	44.430	44.430

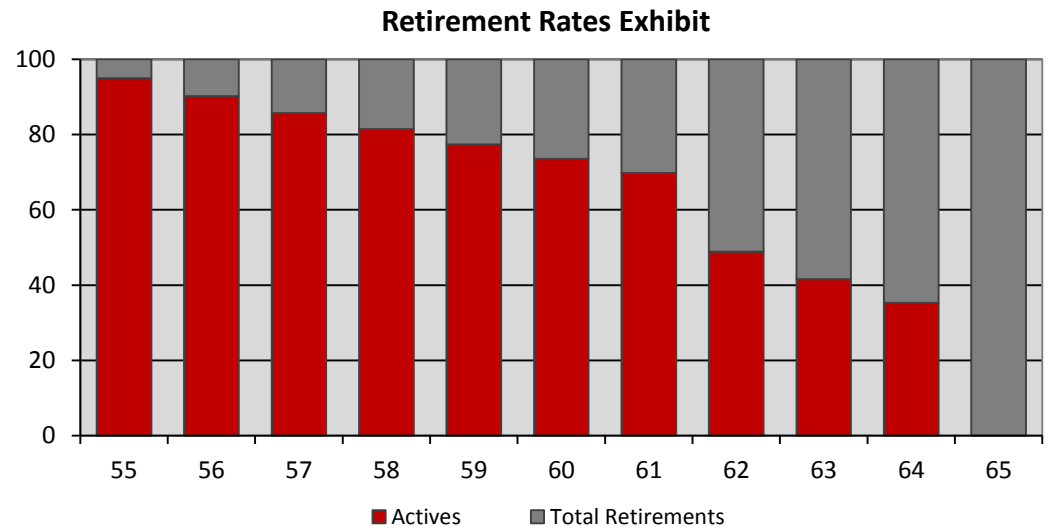


\* The above rates are illustrative rates and are not used in our GASB calculations.

### 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	5.0%	5.000	95.000
56	95.000	5.0%	4.750	90.250
57	90.250	5.0%	4.513	85.738
58	85.738	5.0%	4.287	81.451
59	81.451	5.0%	4.073	77.378
60	77.378	5.0%	3.869	73.509
61	73.509	5.0%	3.675	69.834
62	69.834	30.0%	20.950	48.884
63	48.884	15.0%	7.333	41.551
64	41.551	15.0%	6.233	35.318
65	35.318	100.0%	35.318	0.000



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

## Illustration of GASB Calculations

The purpose of the illustration is to familiarize non-actuaries with the GASB 45 actuarial calculation process.

### I. Facts

1. The employer provides subsidized retiree health coverage worth \$100,000 to employees retiring at age 55 with 25 years of service. The employer funds for retiree health coverage on a pay-as-you-go basis.
2. Employee X is age 50 and has worked 20 years with the employer.
3. Retiree health subsidies are paid from the general fund assets which are expected to earn 4.5% per year on a long-term basis.
4. 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** represents the portion of the Present Value of Future Benefits which has been accrued recognizing the employee's past service with the employer. The Actuarial Accrued Liability 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 Actuarial Accrued Liability 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.
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.

**Definitions (continued)**

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.