(dollar amounts expressed in thousands)

Note 10. Other Post-Employment Benefits

A. OPEB PLAN DESCRIPTION

The City provides post-employment healthcare benefits (OPEB) for retired employees and their dependents through the City of Tulsa Postretirement Medical Plan (the Plan), a multi-employer defined benefit healthcare plan. The governmental activities, business type activities and component units account for 96% of the OPEB liability. Other organizations, not in the reporting entity account for the remaining 4%. The benefits, coverage levels, employee contributions and employer contributions are governed by the City and can be amended by the City through its personnel manual and union contracts. The Plan does not issue a stand-alone financial report.

B. BENEFITS PROVIDED

The Plan covers all current retirees who elected postretirement medical coverage through the City of Tulsa and future retired general employees. All current active police officers and firefighters are covered by a separate trust established specifically to provide medical benefits to the City of Tulsa police officers and firefighters and are not considered for this disclosure.

All healthcare benefits are provided through the City's fully insured health plan. The benefit levels are the same as those afforded to active employees. Benefits include general inpatient and outpatient medical services and prescriptions. General employees are eligible for membership in the Plan if they retire from the City on or after age 55 with 5 years of service or with age and service totaling 80 points. Coverage ceases upon eligibility of the member (retiree or dependent) for Medicare. Coverage for dependents can continue upon the death of the retiree. Spouses of employees eligible for benefits and who die in active service can receive coverage.

C. MEMBERSHIP

As of the most recent actuarial valuation date, membership consisted of the following:

Retired participants	123
Active employees	2,188
	2,311

D. FUNDING POLICY

The City offers retiree medical coverage at the same rate as that provided to current employees. The retirees are responsible for the full cost of the group contract rate.

E. ANNUAL OPEB COSTS

Year	Annual OPEB Cost	Employer Contributions	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
2016	$ 675	$ 797	118%	$ 16,807
2015	910	618	68%	16,929
2014	1,062	1,332	125%	16,637

F. The net OPEB obligation was calculated as follows:

Annual Required Contribution	$ 977
Interest on Net OPEB Obligation	677
Adjustment to Annual Required Contribution	(979)
Annual OPEB Cost	675
Contributions	(797)
Decrease in Net OPEB Obligation	(122)
Net OPEB Obligation, beginning of year	16,929
Net OPEB Obligation, end of year	$ 16,807

G. Net OPEB Obligation reported in:

Governmental activities	$ 8,179
Business type activities	1,226
Component units	6,712
Organizations not in reporting entity	690
	$ 16,807

H. The funded status of the plan as of July 1, 2015

Actuarial Accrued Liability	$ 9,713
Actuarial value of plan assets	-
Unfunded Actuarial Accrued Liability (UAAL)	$ 9,713
Funded ratio	0%
Covered payroll (active plan members)	$ 101,059
UAAL as a percentage of covered payroll	9.6%

I. ACTUARIAL METHODS AND ASSUMPTIONS

Projections of benefits for financial reporting purposes are based on the substantive Plan (the Plan as understood by the employer and Plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members

Note 10. Other Post-Employment Benefits, continued

to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to financial statements, presents multi-year trend information that shows whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions

Valuation date	July 1, 2015
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Remaining amortization periods	30 years open
Discount rate	4.0%
Inflation rate	3.0%
Initial annual healthcare cost trend rate	8.5%
Annual reduction of healthcare cost trend rate	0.5%
Ultimate annual healthcare cost trend rate	5%

CITY OF TULSA
REQUIRED SUPPLEMENTARY INFORMATION
June 30, 2016
(dollar amounts expressed in thousands)

Other Post-Employment Benefits

For the current and prior two years

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
7/1/15	$ -	$ 9,713	$ 9,713	0.0%	$ 101,059	9.6%
7/1/14	-	12,180	12,180	0.0%	100,176	12.2%
7/1/13	-	14,216	14,216	0.0%	105,553	13.5%

City of Tulsa

GASB 45 Actuarial Valuation

Fiscal Year Ending June 30, 2016

Prepared by:
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Indianapolis, IN 46250
Ph: (317) 845-3500
www.nyhart.com

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August 15, 2016

City of Tulsa
David Bryant
175 E. Second Street, Suite 05-36B
Tulsa, OK 74103

This report summarizes the GASB 45 actuarial valuation for the City of Tulsa 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.

August 15, 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.

Randy Gomez

Randy Gomez, FSA, MAAA
Consulting 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.

		As of July 1, 2014		*As of July 1, 2015*
Actuarial Accrued Liability	$	12,180,149	$	9,713,333
Actuarial Value of Assets	$	0	$	0
Unfunded Actuarial Accrued Liability	$	12,180,149	$	9,713,333
Funded Ratio		0.0%		0.0%

		FY 2014/15		*FY 2015/16*
Annual Required Contribution	$	1,206,836	$	977,032
Annual OPEB Cost	$	910,202	$	675,192
Annual Employer Contribution	$	618,239	$	796,490

		As of June 30, 2015		*As of June 30, 2016*
Net OPEB Obligation	$	16,928,680	$	16,807,382

	As of June 30, 2016
Total Active Participants	2,188
Total Retiree Participants	123

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.

		As of July 1, 2014		*As of July 1, 2015*
Present Value of Future Benefits	$	**15,606,008**	$	**12,487,023**
Active Employees		12,428,641		10,740,082
Retired Employees		3,177,367		1,746,941
Actuarial Accrued Liability	$	**12,180,149**	$	**9,713,333**
Active Employees		9,002,782		7,966,392
Retired Employees		3,177,367		1,746,941
Normal Cost	$	**483,131**	$	**399,336**
Future Normal Cost	$	**2,942,728**	$	**2,374,354**

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 City needs to fully fund its retiree health care obligations assuming all actuarial assumptions are met.

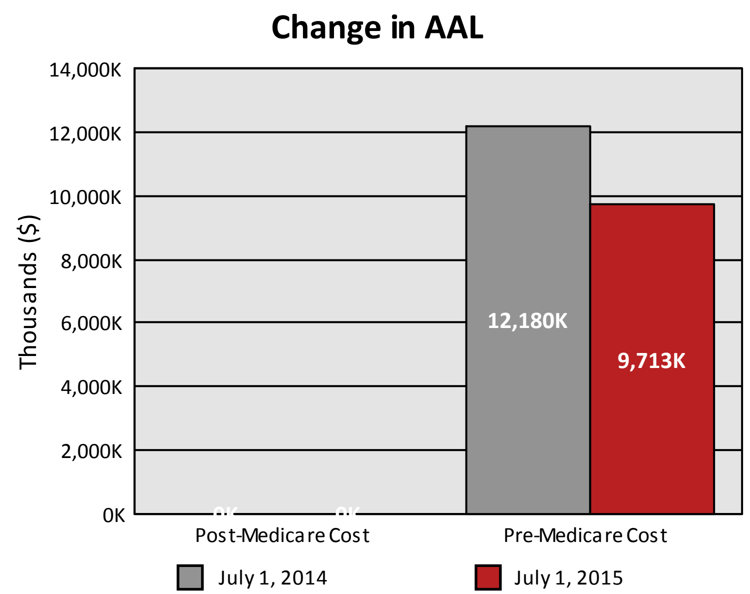
Actuarial Accrued Liability is the portion of PVFB considered to be accrued or earned as of July 1, 2014 and July 1, 2015. This amount is a required disclosure in the Required Supplementary Information section.

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 dollar.

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 dollar.

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.

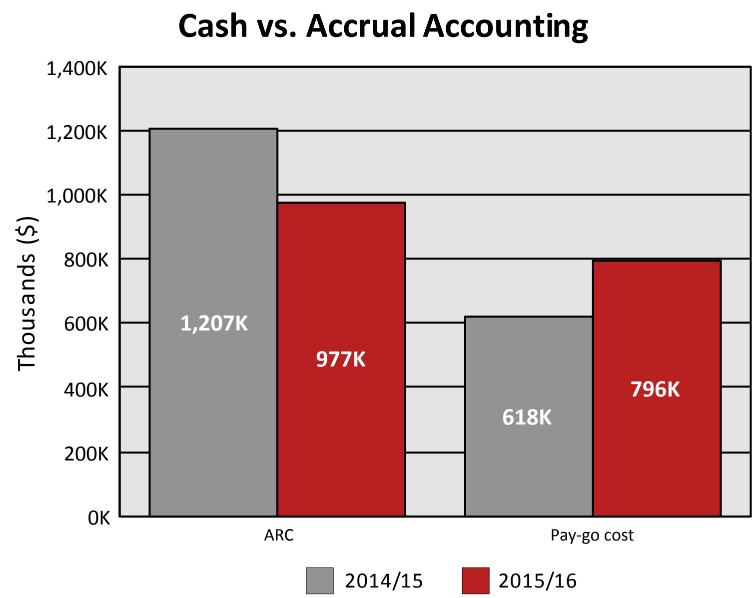
Actuarial Accrued Liability (AAL)		*As of July 1, 2014*		*As of July 1, 2015*
Total Active AAL	**$**	**9,002,782**	**$**	**7,966,392**
Active Pre-Medicare		9,002,782		7,966,392
Active Post-Medicare		0		0
Total Retirees AAL	**$**	**3,177,367**	**$**	**1,746,941**
Retirees Pre-Medicare		3,177,367		1,746,941
Retirees Post-Medicare		0		0
Total AAL	**$**	**12,180,149**	**$**	**9,713,333**



Development of Annual Required Contribution (ARC)

Required Supplementary Information		*FY 2014/15*		*FY 2015/16*
Actuarial Accrued Liability as of beginning of year	$	12,180,149	$	9,713,333
Actuarial Value of Assets as of beginning of year		0		0
Unfunded Actuarial Accrued Liability (UAAL)	**$**	**12,180,149**	**$**	**9,713,333**
Covered payroll	$	100,175,865	$	101,058,503
UAAL as a % of covered payroll		12.2%		9.6%

Annual Required Contribution		*FY 2014/15*		*FY 2015/16*
Normal cost as of beginning of year	$	483,131	$	399,336
Amortization of the UAAL		677,288		540,118
Total normal cost and amortization payment	$	1,160,419	$	939,454
Interest to end of year		46,417		37,578
Total Annual Required Contribution (ARC)	$	**1,206,836**	$	**977,032**



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.

*2014/15 covered payroll is based on final 2013/14 covered payroll excluding airport employees and increased by the payroll growth assumption (3.0%).

Development of Annual OPEB Cost and Net OPEB Obligation

Net OPEB Obligation		FY 2014/15		FY 2015/16
ARC as of end of year	$	1,206,836	$	977,032
Interest on Net OPEB Obligation (NOO) to end of year		665,469		677,147
NOO amortization adjustment to the ARC		(962,103)		(978,987)
Annual OPEB cost	$	910,202	$	675,192
Annual employer contribution for pay-go cost		(618,239)		(796,490)
Annual employer contribution for pre-funding		0		0
Change in NOO	$	291,963	$	(121,298)
NOO as of beginning of year		16,636,717		16,928,680
NOO as of end of year	**$**	**16,928,680**	**$**	**16,807,382**

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.

*2014/15 annual employer contribution for pay-go cost is the difference between: (a) $1,824,158 retiree claims paid by the City and (b) $1,205,919 retiree contributions.
**2015/16 annual employer contribution for pay-go cost is the difference between: (a) $2,031,223 retiree claims paid by the City and (b) $1,234,733 retiree contributions.

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 City's Notes to Financial Statement for fiscal year ending June 30, 2015.

Schedule of Funding Progress

As of	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL as % of Covered Payroll
	A	B	C = A - B	D = B / A	E	F = C / E
July 1, 2015	$ 9,713,333	$ 0	$ 9,713,333	0.0%	$ 101,058,503	9.6%
July 1, 2014	$ 12,180,149	$ 0	$ 12,180,149	0.0%	$ 100,175,865	12.2%
July 1, 2013	$ 14,216,484	$ 0	$ 14,216,484	0.0%	$ 105,552,848	13.5%

Schedule of Employer Contributions

FYE	Employer Contributions	Annual Required Contribution (ARC)	% of ARC Contributed
	A	B	C = A / B
June 30, 2016	$ 796,490	$ 977,032	81.5%
June 30, 2015	$ 618,239	$ 1,206,836	51.2%
June 30, 2014	$ 1,331,878	$ 1,376,200	96.8%

Historical Annual OPEB Cost

As of	Annual OPEB Cost	% of Annual OPEB Cost Contributed	Net OPEB Obligation
June 30, 2016	$ 675,192	118.0%	$ 16,807,382
June 30, 2015	$ 910,202	67.9%	$ 16,928,680
June 30, 2014	$ 1,061,842	125.4%	$ 16,636,717

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.

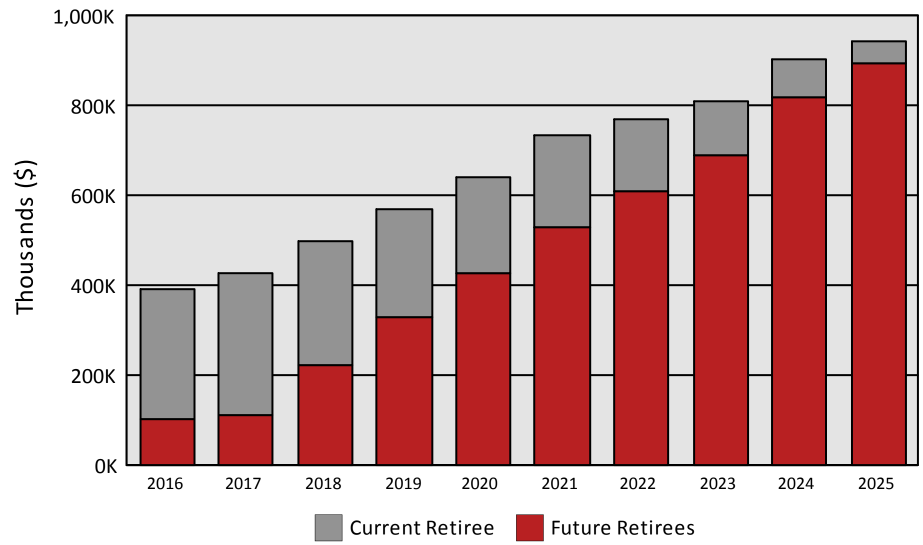
	FY 2014/15	FY 2015/16
Actuarial Accrued Liability as of beginning of year	$ 12,180,149	$ 9,713,333
Normal cost as of beginning of year	483,131	399,336
Expected benefit payments during the year	(734,175)	(391,281)
Interest adjustment to end of year	491,992	396,757
Expected Actuarial Accrued Liability as of end of year[1]	$ 12,421,097	$ 10,118,145
(Gain) / loss due to experience	(2,871,484)	0
(Gain) / loss due to provisions / assumption changes	163,720	0
Actuarial Accrued Liability as of end of year	$ 9,713,333	$ 10,118,145

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.

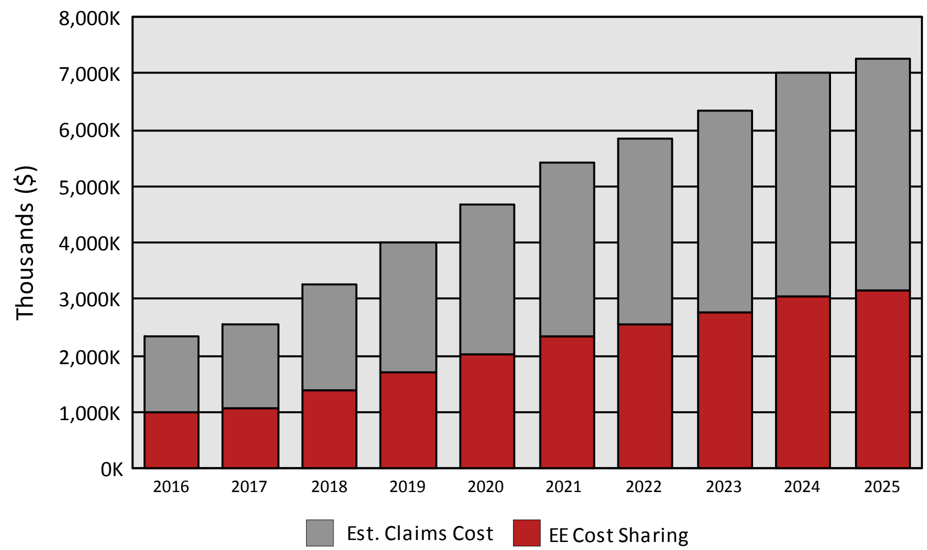
Actuarial Accrued Liability (AAL) as of beginning of year was actuarially rolled-back from end of year AAL on a “no gain/loss” basis.

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	$ 288,992	$ 102,289	$ 391,281
2017	$ 315,001	$ 111,495	$ 426,496
2018	$ 275,463	$ 221,699	$ 497,162
2019	$ 238,193	$ 329,160	$ 567,353
2020	$ 215,083	$ 424,963	$ 640,046
2021	$ 204,385	$ 529,993	$ 734,378
2022	$ 157,420	$ 609,524	$ 766,944
2023	$ 120,538	$ 688,833	$ 809,371
2024	$ 88,458	$ 815,541	$ 903,999
2025	$ 47,952	$ 893,900	$ 941,852



FYE	Estimated Claims Cost	Retiree Contributions	Net Employer-Paid Costs
2016	$ 1,374,653	$ 983,372	$ 391,281
2017	$ 1,498,372	$ 1,071,876	$ 426,496
2018	$ 1,885,315	$ 1,388,153	$ 497,162
2019	$ 2,283,066	$ 1,715,713	$ 567,353
2020	$ 2,658,876	$ 2,018,830	$ 640,046
2021	$ 3,081,183	$ 2,346,805	$ 734,378
2022	$ 3,314,869	$ 2,547,925	$ 766,944
2023	$ 3,572,961	$ 2,763,590	$ 809,371
2024	$ 3,953,112	$ 3,049,113	$ 903,999
2025	$ 4,109,693	$ 3,167,841	$ 941,852



Eligibility

Employees are eligible for retiree health care benefits until Medicare eligibility at the earlier of:

1. Age 55 with 5 years of service (Early Retirement)
2. Age 65 with 5 years of service (Normal Retirement)
3. 80 points (years of service plus age must be greater than or equal to 80)

Active police officers and firefighters are covered by a separate Trust established specifically to provide medical benefits to the City of Tulsa police officers and firefighters. They are excluded from this GASB 45 disclosure.

Spouse Benefit

Surviving spouse can continue coverage until age 65 after the death of the retiree or active employee eligible to retire.

Medical Benefit

Same benefit options are available to retirees as active employees. All health plans are fully-insured and experience-rated. The monthly premiums by plan effective on January 1, 2016 are as shown below.

	Base Premium		Budgeted by City*	
	Single	**Family**	**Single**	**Family**
Select Advantage HMO - 100/6,600	$ 345.00	$ 863.00	$ 346.66	$ 867.16
Standard HMO - 100/6,600	$ 383.00	$ 958.00	$ 384.66	$ 962.16
Select Plus POS - 80/5,000	$ 384.00	$ 961.00	$ 385.66	$ 965.16
Select Plus HSA - 80/2,600	$ 427.00	$ 1,068.00	$ 428.66	$ 1,072.16
Select Advantage HSA - 80/1,500	$ 434.00	$ 1,085.00	$ 435.66	$ 1,089.16
Select Plus HMO - 80/2,500	$ 463.00	$ 1,159.00	$ 464.66	$ 1,163.16
Standard HMO - 80/2,500	$ 484.00	$ 1,211.00	$ 485.66	$ 1,215.16
Select Plus HMO - 80/1,000	$ 481.00	$ 1,203.00	$ 482.66	$ 1,207.16
Standard HMO - 80/500	$ 546.00	$ 1,367.00	$ 547.66	$ 1,371.16

* The additional cost budgeted by City is used to pay for broker fee.

Retiree Cost Sharing

Retirees pay the full cost of coverage, which is assumed to be the City's budgeted amounts.

Sworn Firefighters and Police Officers

Active police officers and firefighters are covered by a separate trust established specifically to provide medical benefits to the City of Tulsa sworn firefighters and police officers. These sworn employees have their own group health plan, separate from the City. They have been excluded from this GASB valuation.

Civilian employees of these two departments are covered under the City's group health plan and are included in this GASB valuation.

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

There are changes to the plan provisions and actuarial methods and assumptions since the last GASB valuation, which was for the fiscal year ending June 30, 2014. Please refer to the Actuary's Notes section for complete information on these changes. For the current year GASB valuation, we have also updated the per capita costs 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, 2018.

Measurement Date	June 30, 2016 with results actuarially rolled-back to July 1, 2015 on a "no gain/no loss" basis
Discount Rate	4.0%
Payroll Growth	N/A
Inflation Rate	3.0% per year
Cost Method	Entry Age Normal Level Dollar
Amortization	Level dollar amount over thirty years based on an open group
Experience Study	Best actuarial practices call for a periodic assumption review, and Nyhart recommends the City 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, 2018. Health coverage assumptions for the retiree and spouse have not been updated for actual City experience since at least 2012. Disability, termination, and retirement rates have been assumed to follow the appropriate pension fund's assumptions without adjustment. These will be updated for the fiscal year ending 2018 valuation per the experience study that will be performed for the pension fund in 2016.
Census Data	Census information was provided by the City as of May 2016. We have reviewed it for reasonableness and no material modifications were made. EMSA employees have been excluded as they are ineligible for retiree health benefits with the City.
Health Care Coverage Election Rate	60% of active employees with current coverage are assumed to continue 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. 0% of retirees without current coverage are assumed to elect coverage in the future.

Employer Funding Policy

Pay-as-you-go cash basis

Spousal Coverage

70% of employees are assumed to be married at retirement. Husbands are assumed to be three years older than wives.

Spousal coverage for current retirees is based on actual data.

Mortality

RPH-2015 Total Dataset Mortality Table fully generational using Scale MP-2015

RPH-2015 table is calculated based on RPH-2014 table with 8 years of MP-2014 mortality improvement backed out and projected to 2015 using Scale MP-2015

Disability

None

Medical Trend Rates

FYE	Rates	FYE	Rates
2016	9.0%	2021	6.5%
2017	8.5%	2022	6.0%
2018	8.0%	2023	5.5%
2019	7.5%	2024+	5.0%
2020	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.

Retiree Contributions

Retiree contributions are assumed to increase according to medical trend rates.

Turnover Rate

Assumption used to project terminations (voluntary and involuntary) prior to meeting minimum retirement eligibility for retiree health coverage. Sample annual rates shown below are based on Municipal Employees' Retirement Plan of the City of Tulsa actuarial valuation as of January 1, 2013.

Service	All Ages	Years from Normal Retirement	Over 5 YOS
0	25.00%	1	1.09%
1	20.00%	5	1.63%
2	15.00%	10	2.71%
3	12.50%	15	4.50%
4	10.00%	20	7.46%
		25	9.55%

Retirement Rate

Annual rates of retirement are based on Municipal Employees' Retirement Plan of the City of Tulsa actuarial valuation as of January 1, 2013.

Age	Normal Retirement	Early Retirement
49	5.00%	N/A
50 – 54	11.00%	N/A
55 – 56	13.00%	5.00%
57 – 58	13.00%	3.50%
59	13.00%	5.00%
60	17.00%	7.50%
61	10.00%	5.00%
62	40.00%	20.00%
63	30.00%	12.00%
64	25.00%	12.00%
65 – 68	25.00%	N/A
69 – 74	20.00%	N/A
75+	100.00%	N/A

* Retirement rates are increased by a 75% load at first eligible age for normal retirement less than age 65.

Per Capita Costs

Annual per capita costs were calculated based on weighted averages of the City's budgeted premium rates as of January 1, 2016 and 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:

	Plans with single premiums < $450		Plans with single premiums > $450	
Age	Male	Female	Male	Female
< 50	$ 4,700	$ 4,700	$ 5,800	$ 5,800
50 – 54	$ 4,700	$ 5,500	$ 5,800	$ 6,800
55 – 59	$ 6,300	$ 6,200	$ 7,800	$ 7,600
60 – 64	$ 8,100	$ 7,300	$ 10,000	$ 9,000

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.

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 age 64 enrolled in the Select Advantage HMO - 100/6,600 plan.

	Premium Rate	Retiree Contribution	Explicit Subsidy
	A	B	C = A – B
Retiree	$ 346.66	$ 346.66	$ 0.00
Spouse	$ 520.50	$ 520.50	$ 0.00

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 retiree age 64 with spouse of the same age enrolled in the Select Advantage HMO - 100/6,600 plan.

	Per Capita Cost	Premium Rate	Implicit Subsidy
	A	B	C = A – B
Retiree	$ 675.00	$ 346.66	$ 328.34
Spouse	$ 608.33	$ 520.50	$ 87.83

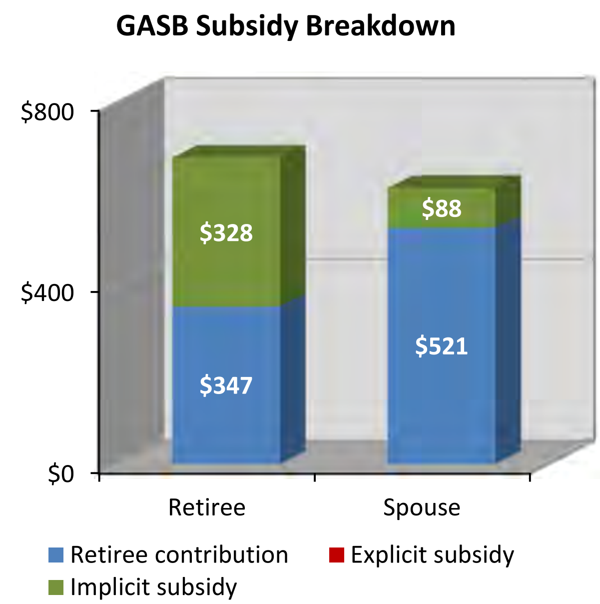
All employers that utilize premium rates based on blended active/retiree claims experience will have an implicit subsidy.

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 retiree age 64 with spouse of the same age enrolled in the Select Advantage HMO - 100/6,600 plan.

	Retiree		Spouse	
Retiree contribution	$	346.66	$	520.50
Explicit subsidy	$	0.00	$	0.00
Implicit subsidy	$	328.34	$	87.83
Total monthly cost	$	675.00	$	608.33



Actives with coverage	*Single*	*Family*	*Total*	*Avg. Age*	*Avg. Svc*	*Salary*
Select Advantage HMO - 100/6,600	111	93	204	43.1	9.7	$8,758,805
Select Advantage HSA - 80/1,500	118	85	203	46.7	11.5	$10,779,156
Select Plus HMO - 80/1,000	258	274	532	48.4	11.8	$24,744,010
Select Plus HMO - 80/2,500	195	286	481	49.3	14.2	$22,802,784
Select Plus HSA - 80/2,600	18	25	43	46.5	11.6	$1,943,104
Select Plus POS - 80/5,000	150	118	268	44.2	9.1	$11,856,975
Standard HMO - 100/6,600	10	15	25	50.3	10.8	$1,114,805
Standard HMO - 80/2,500	30	44	74	50.8	14.1	$3,567,632
Standard HMO - 80/500	42	46	88	48.9	11.8	$4,168,067
Total actives with coverage	**932**	**986**	**1,918**	**47.4**	**11.8**	**$89,735,338**

Actives without coverage	*Total*	*Avg. Age*	*Avg. Svc*	*Salary*
Total actives without coverage	270	43.8	7.6	$11,323,165
Total actives without coverage	**270**	**43.8**	**7.6**	**$11,323,165**

Active employees who currently have no coverage are assumed not to elect the City's group health plan at retirement. They have been excluded from the GASB valuation.

59 active employees in the EMSA group have been excluded from this GASB valuation as they are ineligible for retiree health benefits with the City.

Retirees with coverage	*Single*	*Family*	*Total*	*Avg. Age*
Select Advantage HMO - 100/6,600	17	2	19	61.2
Select Advantage HSA - 80/1,500	8	2	10	58.3
Select Plus HMO - 80/1,000	16	1	17	61.3
Select Plus HMO - 80/2,500	44	6	50	62.2
Select Plus HSA - 80/2,600	3	2	5	60.7
Select Plus POS - 80/5,000	7	2	9	60.9
Standard HMO - 100/6,600	2	0	2	60.8
Standard HMO - 80/2,500	7	0	7	61.6
Standard HMO - 80/500	3	1	4	60.3
Total retirees with coverage	**107**	**16**	**123**	**61.3**

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	39	42	1								82
25 to 29	41	103	20								164
30 to 34	36	95	48	32	1						212
35 to 39	29	70	64	42	27						232
40 to 44	22	66	39	28	41	9					205
45 to 49	16	58	51	43	49	40	28				285
50 to 54	15	57	40	49	54	49	49	22	5		340
55 to 59	11	62	55	45	33	38	28	30	20		322
60 to 64	5	34	43	37	52	18	20	15	15	10	249
65 to 69	2	11	20	10	9	8	6	2	6	3	77
70 & up	1	3	3	4	2	1		2	2	2	20
Total	**217**	**601**	**384**	**290**	**268**	**163**	**131**	**71**	**48**	**15**	**2,188**

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 the Summary of Participants section for an accurate breakdown of active employees with and without coverage.

	As of June 30, 2014	*As of June 30, 2016*
Active Participants	2,453	2,188
Inactive Participants	218	123
Averages for Actives		
Age	46.7	46.9
Service	11.3	11.3
Averages for Inactives		
Age	59.3	61.3

Active enrollment as of June 30, 2014 includes Airport employees which are no longer enrolled in the City's group health plan.

Appendix B – Detailed Actuary's Notes

Several actuarial assumptions have been updated since the last full valuation, which was for the fiscal year ending June 30, 2016.

1. Mortality table has been updated as follows. This change caused a slight decrease to the City's liabilities.

Prior Valuation	Current Valuation*
RP-2000 Combined Mortality Table fully generational projected using Scale AA	RPH-2015 Total Dataset Mortality Table fully generational using Scale MP-2015

*RPH-2015 table is calculated based on RPH-2014 table with 8 years of MP-2014 mortality improvement backed out and projected to 2015 using Scale MP-2015

2. Due to the removal of the City's explicit subsidy for retiree health coverage as of July 1, 2014, the election rate assumption for those without coverage during employment has been changed from 60% to 0%. This caused a decrease in liabilities.

3. Health Care Trend Rates have been reset to an initial rate of 9.0% in 2016, decreasing by 0.5% annually to an ultimate rate of 5.0%. Previously, the initial health care trend rate was 9.0% in 2014, decreasing by 0.5% annually to an ultimate rate of 5.0%. This caused an increase in liabilities.

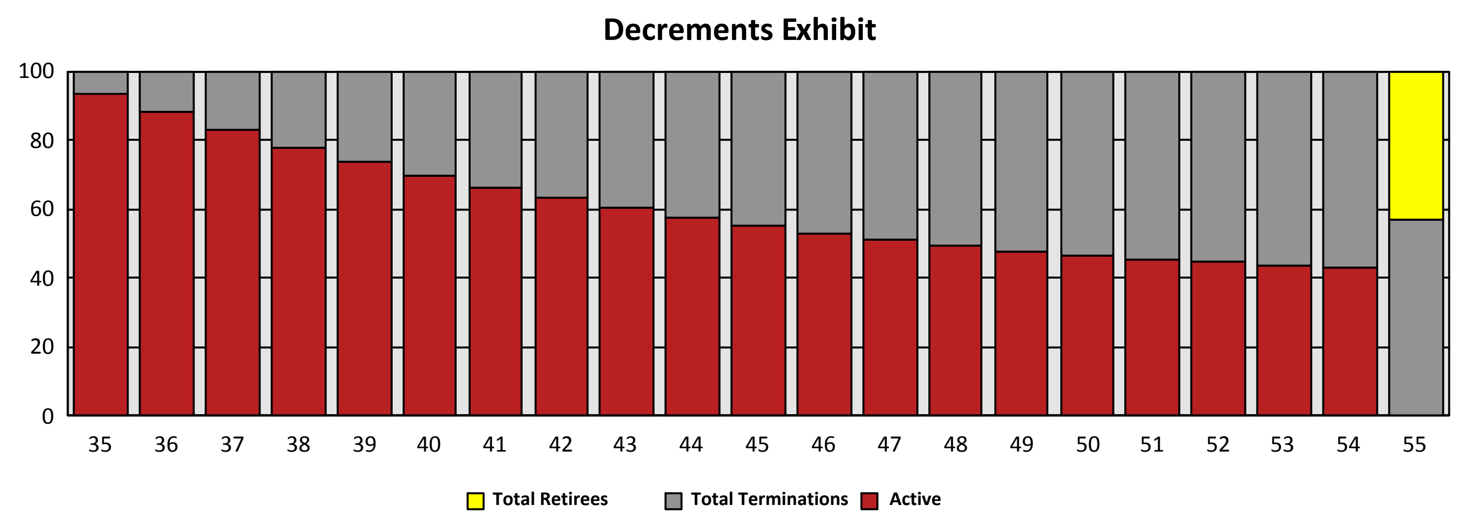
Glossary

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



** 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 x B x C x 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 x 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% x (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.

nyhart

City of Tulsa

Interim GASB 45 Actuarial Valuation
Fiscal Year Ending June 30, 2015

Prepared by:
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August 21, 2015

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City of Tulsa
175 East Second Street, Suite 08-208
Tulsa, OK 74103

This report summarizes the interim GASB actuarial valuation for the City of Tulsa 2014/15 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.

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.

Randy Gomez

Randy Gomez, FSA, MAAA
Consulting Actuary

Evi Laksana, ASA, MAAA
Valuation Actuary

Summary of Results

Presented below is the summary of GASB 45 results for the fiscal year ending June 30, 2014 projected from the prior fiscal year valuation.

		As of July 1, 2013		*As of July 1, 2014*
Actuarial Accrued Liability	$	14,216,484	$	12,180,149
Actuarial Value of Assets	$	0	$	0
Unfunded Actuarial Accrued Liability	$	14,216,484	$	12,180,149
Funded Ratio		0.0%		0.0%

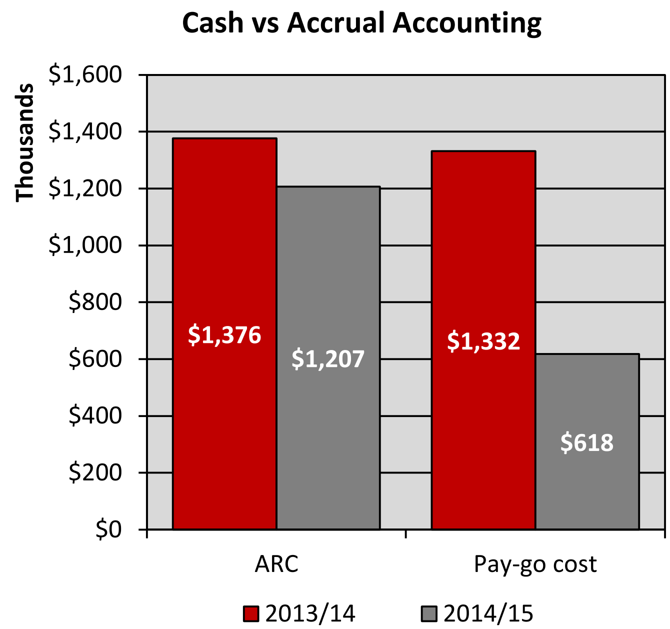
		FY 2013/14		*FY 2014/15*
Annual Required Contribution	$	1,376,200	$	1,206,836
Annual OPEB Cost	$	1,061,842	$	910,202
Annual Employer Contribution	$	1,331,878	$	618,239

		As of June 30, 2014		*As of June 30, 2015*
Net OPEB Obligation	$	16,636,717	$	16,928,680

Development of Annual Required Contribution (ARC)

Required Supplementary Information		FY 2013/14		FY 2014/15
Actuarial Accrued Liability as of beginning of year	$	14,216,484	$	12,180,149
Actuarial Value of Assets as of beginning of year		0		0
Unfunded Actuarial Accrued Liability (UAAL)	**$**	**14,216,484**	**$**	**12,180,149**
Covered payroll[1]	$	105,552,848	$	100,175,865
UAAL as a % of covered payroll		13.5%		12.2%

Annual Required Contribution		FY 2013/14		FY 2014/15
Normal cost as of beginning of year	$	532,749	$	483,131
Amortization of the UAAL		790,520		677,288
Total normal cost and amortization payment	$	1,323,269	$	1,160,419
Interest to end of year		52,931		46,417
Total Annual Required Contribution (ARC)	**$**	**1,376,200**	**$**	**1,206,836**



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.

[1] 2014/15 covered payroll is based on final 2013/14 covered payroll excluding airport employees and increased by the payroll growth assumption (3.0%).

Development of Annual OPEB Cost and Net OPEB Obligation

Net OPEB Obligation		FY 2013/14		FY 2014/15
ARC as of end of year	$	1,376,200	$	1,206,836
Interest on Net OPEB Obligation (NOO) to end of year		705,230		665,469
NOO amortization adjustment to the ARC		(1,019,588)		(962,103)
Annual OPEB cost	$	1,061,842	$	910,202
Annual employer contribution for pay-go cost[2]		(1,331,878)		(618,239)
Annual employer contribution for pre-funding		0		0
Change in NOO	$	(270,036)	$	291,963
NOO as of beginning of year		17,630,754		16,636,717
NOO as of end of year	$	17,630,718	$	16,928,680
NOO adjustment due to removal of Airport employees		(724,001)		N/A
Final NOO	**$**	**16,636,717**		**16,928,680**

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.

[2] 2013/14 annual employer contribution for pay-go cost is the difference between: (a) $2,420,816 retiree claims paid by the City and (b) $1,088,938 retiree contributions.
2014/15 annual employer contribution for pay-go cost is the difference between: (a) $1,824,158 retiree claims paid by the City and (b) $1,205,919 retiree contributions.

Summary of GASB 45 Financial Results

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

Schedule of Funding Progress

As of	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL as % of Covered Payroll
	A	B	C = A - B	D = B / A	E	F = C / E
July 1, 2014	$ 12,180,149	$ -	$ 12,180,149	0.0%	$ 100,175,865	12.2%
July 1, 2013	$ 14,216,484	$ -	$ 14,216,484	0.0%	$ 105,552,848	13.5%
July 1, 2012	$ 28,538,863	$ -	$ 28,538,863	0.0%	$ 101,630,549	28.1%

Schedule of Employer Contributions

FYE	Employer Contributions	Annual Required Contribution (ARC)	% of ARC Contributed
	A	B	C = A / B
June 30, 2015	$ 618,239	$ 1,206,836	51.2%
June 30, 2014	$ 1,331,878	$ 1,376,200	96.8%
June 30, 2013	$ 1,685,365	$ 2,879,632	58.5%

Historical Annual OPEB Cost

As of	Annual OPEB Cost	% of Annual OPEB Cost Contributed	Net OPEB Obligation
June 30, 2015	$ 910,202	67.9%	$ 16,928,680
June 30, 2014	$ 1,061,842	125.4%	$ 16,636,717
June 30, 2013	$ 2,581,248	65.3%	$ 17,630,754

Summary of Key Actuarial Assumptions

For a more complete summary of assumptions, refer to the GASB 45 Financial Report for fiscal year ending June 30, 2014.

Discount Rate 4.0%

Inflation Rate 3.0% per year

Payroll Growth 3.0% (used for covered payroll projection only)

Cost Method Entry Age Normal Level Dollar

Amortization Level dollar over thirty years based on an open group

Health Care Trend Rates Annual trend rates are as shown below:

FYE	Rates
2015	8.50%
2016	8.00%
2017	7.50%
2018	7.00%
2019	6.50%
2020	6.00%
2021	5.50%
2022+	5.00%

Actuary's Notes

Interim year valuation results have been projected from prior year's valuation with adjustments for actual premium rate and retiree contribution increases from 2013/14 to 2014/15. The liabilities for FY 2014/15 also reflect the removal of Airport employees as of July 1, 2014.

Retiree Cost Sharing

The monthly retiree contributions effective on July 1, 2013 and 2014 by plan are as shown below.

Eff. July 1, 2013	IDEA (Select & Standard)		Out-of-Area	
Retirement date	**Single**	**Family**	**Single**	**Family**
Prior to 7/1/1998	$ 323.01	$ 809.36	$ 537.36	$ 1,294.92
On/after 7/1/1998	$ 285.01	$ 771.36	$ 499.36	$ 1,256.92

Eff. July 1, 2014	80/2500 Select		80/2500 Standard		Out-of-Area	
Retirement date	**Single**	**Family**	**Single**	**Family**	**Single**	**Family**
Prior to 7/1/1998	$ 404.41	$ 1,012.06	$ 438.41	$ 1,096.06	$ 705.18	$ 1,767.47
On/after 7/1/1998	$ 404.41	$ 1,012.06	$ 438.41	$ 1,096.06	$ 705.18	$ 1,767.47

Medical Benefit

The monthly premiums by plan effective on July 1, 2013 and 2014 are as shown below.

Eff. July 1, 2013	Billed by TPA		Budgeted by City*	
	Single	**Family**	**Single**	**Family**
IDEA (Select & Standard)	$ 380.01	$ 950.84	$ 397.90	$ 968.73
Out-of-Area	$ 594.36	$ 1,483.52	$ 612.25	$ 1,501.41

Eff. July 1, 2014	Billed by Plan		Budgeted by City**	
	Single	**Family**	**Single**	**Family**
80/2500 Select	$ 402.00	$ 1,006.00	$ 404.41	$ 1,012.06
80/2500 Standard	$ 436.00	$ 1,090.00	$ 438.41	$ 1,096.06
Out-of-Area	$ 701.00	$ 1,761.41	$ 705.18	$ 1,767.47

* The additional cost budgeted by City is used to pay for broker fee and fund wellness plan and in-house clinic.
** The additional cost budgeted by City is used to pay for broker fee and in-house clinic.

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GASB 75 Modeling

December 2016

City of Tulsa

Nyhart Actuary & Employee Benefits
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Comparison of GASB 45 and GASB 75

	GASB 45	*GASB 75*
Discount Rate	Discount rate assumption is based on the underlying asset used to finance the OPEB plan. For all groups, the 90-day T-bill index was used as a guide for this assumption. The assumed discount rate for all groups is 4.00%.	For unfunded plans, the tax-exempt, high quality municipal general obligation bond rate was used, which is 2.92% as of June 30, 2016 for accounting disclosure purposes. Refer to the Discussion of Discount Rates section for more information on selection of the discount rate.
Cost Method	The cost method used to calculate the OPEB accounting liability and funding liability is Entry Age Normal Level Dollar.	The cost method used to calculate the OPEB accounting and funding liability is Entry Age Normal Level % of Salary.
Discount Rate and Cost Method Impact	Comparison of OPEB accounting liability as of June 30, 2016 under the old and new cost methods and discount rates are as shown below:	

	GASB 45		GASB 75	
	Discount Rate	**Entry Age Normal Level Dollar**	**Discount Rate**	**Entry Age Normal Level % of Salary**
City of Tulsa	4.00%	$ 6,282,764[1]	2.92%	$ 6,427,036

Balance Sheet Impact	The balance sheet liability for all groups is based on the Net OPEB Obligation balance, which is $16,435,023 as of June 30, 2016.	The balance sheet liability for all groups is based on the Net OPEB Liability, which is $6,427,036 as of June 30, 2016.
Income Statement Impact	The OPEB expense is equivalent to the Annual Required Contribution, which is $604,673 for FYE June 30, 2016.	The OPEB expense is as shown on page 4 of this report, which is $521,770 for FYE June 30, 2016.

[1] This figure includes election rate and spousal coverage election rate assumption changes as proposed during the experience study performed in December 2016.

Comparison of GASB 45 and GASB 75 – Continued

	GASB 45	*GASB 75*
Amortizations for Annual Expense	Many options are available for creating and maintaining amortization basis.	The amortization treatment varies by experience, assumption, and benefit changes affecting the actuarial liability or Trust assets. Experience losses / gains: the difference between expected and actual experience is amortized over a closed period, which is based on average future service to retirement beginning in the current period. Changes in assumptions: changes in actuarial assumptions (demographic or economic) are amortized over a closed period, which is based on average future service to retirement beginning in the current period. Changes in benefit terms: changes in substantive plan provisions (including health plan offerings) are recognized fully in the current period. All amortizations are on a principal-only basis (for example a $100,000 loss amortized over 10 years will result in a $10,000 amortization annually).

Schedule of Changes in Net OPEB Liability and Related Ratios

OPEB Liability		FY 2015/16
Total OPEB Liability		
Total OPEB liability – beginning of year	$	5,793,944
Service cost		239,619
Interest		224,891
Changes of benefit terms		0
Changes in assumptions		515,342
Differences between expected and actual experience		0
Benefit payments		(346,760)
Net change in total OPEB liability	$	633,092
Total OPEB liability – end of year	$	6,427,036
Plan Fiduciary Net Position		
Plan fiduciary net position – beginning of year	$	0
Contributions – employer		346,760
Contributions – retired members		0
Net investment income		
Benefit payments		(346,760)
Trust administrative expenses		0
Net change in plan fiduciary net position	$	0
Plan fiduciary net position – end of year	$	0
Net OPEB Liability – end of year	$	6,427,036
Plan fiduciary net position as % of total OPEB liability		0.00%
Covered employee payroll	$	101,058,503
Net OPEB liability as % of covered payroll		6.40%

OPEB Expense

OPEB Expense		***FY 2015/16***
Discount Rate		2.92%
Service cost	$	239,619
Interest		224,891
Changes of benefit terms		0
Projected earnings on OPEB plan investments		
Reduction for contributions from active employees		0
OPEB plan administrative expenses		0
Current period recognition of deferred outflows / (inflows) of resources		
Differences between expected and actual experience	$	0
Changes in assumptions		57,260
Net difference between projected and actual earnings on OPEB plan investments		0
Total current period recognition	$	57,260
Total OPEB expense	$	521,770

Deferred Outflows / (Inflows) of Resources

Deferred Outflows / (Inflows) of Resources represents the following items that have not been recognized in the OPEB Expense:

1. Differences between expected and actual experience of the OPEB plan
2. Changes of assumptions
3. Difference between projected an actual earnings in OPEB plan investments (for funded plans only)

The initial amortization period for the first two items noted above is based on the average future service to retirement while the difference between projected and actual earnings in OPEB plan investment is amortized over five years. All balances are amortized linearly on a principal only basis and new bases will be created annually for each of the item above.

Differences between expected and actual experience for FYE	*Initial Balance*	*Initial Amortization Period*	*Annual Recognition*	*Unamortized Balance as of June 30, 2016*
June 30, 2016	$ 0	9	$ 0	$ 0

Changes in assumptions for FYE	*Initial Balance*	*Initial Amortization Period*	*Annual Recognition*	*Unamortized Balance as of June 30, 2016*
June 30, 2016	$ 515,342	9	$ 57,260	$ 458,082

As of fiscal year ending June 30, 2016	*Deferred Outflows*	*Deferred Inflows*
Differences between expected and actual experience	$ 0	$ 0
Changes in assumptions	458,082	0
Net difference between projected and actual earnings in OPEB plan investments	0	0
Total	**$** 458,082	**$ 0**

Deferred Outflows / (Inflows) of Resources – Continued

Annual Amortization of Deferred Outflows / (Inflows)

The balances of 6/30/2016 of the deferred outflows / (inflows) of resources will be recognized in OPEB expense in the future fiscal years as noted below.

FYE	Balance	
2017	$	57,260
2018	$	57,260
2019	$	57,260
2020	$	57,260
2021	$	57,260
Thereafter	$	171,782

Sensitivity Results

The following presents the net OPEB liability as of June 30, 2016, calculated using the discount rate assumed and what it would be using a 1% higher and 1% lower discount rate.

- The current discount rate is 2.9%.
- The 1% decrease in discount rate would be 1.9%.
- The 1% increase in discount rate would be 3.9%.

As of June 30, 2016	Net OPEB Liability	
1% Decrease	$	6,953,556
Current Discount Rate	$	6,427,036
1% Increase	$	5,948,024

The following presents the net OPEB liability as of June 30, 2016, using the health care trend rates assumed and what it would be using 1% higher and 1% lower health care trend rates.

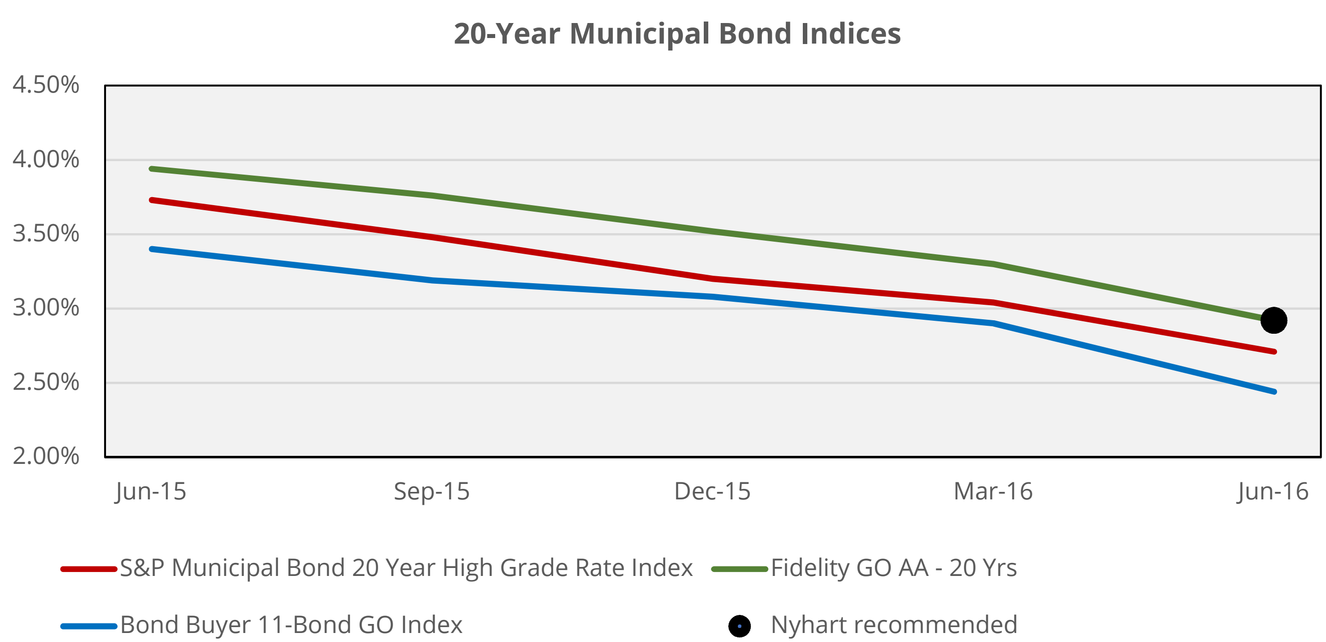
- The current health care trend rate starts at an initial rate of 9.0% decreasing by 0.5% annually to an ultimate rate of 5.0%.
- The 1% decrease in health care trend rates would assume an initial rate of 8.0% decreasing by 0.5% annually to an ultimate rate of 4.0%.
- The 1% increase in health care trend rates would assume an initial rate of 10.0% decreasing by 0.5% annually to an ultimate rate of 6.0%.

As of June 30, 2016	Net OPEB Liability	
1% Decrease	$	5,838,578
Current Health Care Trend Rates	$	6,427,036
1% Increase	$	7,109,109

Under GASB 75, the discount rate used in valuing OPEB liabilities for unfunded plans as of the Measurement Date must be based on a yield for 20-year tax-exempt general obligation municipal bonds with an average rating of AA /Aa or higher (or equivalent quality on another rating scale).

For the current valuation, the discount rate was selected from the range of indices as shown in the table below, where the range is given as the spread between the lowest and highest rate shown.

	Bond Buyer 11-Bond GO Index	S&P Municipal Bond 20-Year High Grade Rate Index	Fidelity 20-Year Go Municipal Bond Index	Nyhart Recommendation	Actual Discount Rate Used
Yield as of June 30, 2016	2.44%	2.71%	2.92%	2.44% - 2.92%	**2.92%**



The Substantive Plan Provisions and Actuarial Methods and Assumptions used in this GASB 75 Modeling are the same as those shown in the FYE June 30, 2016 GASB 45 Actuarial Valuation report except for those noted below.

Discount Rate

2.92% as of June 30, 2016; refer to the Discussion of Discount Rate section for more information on selection of the discount rate.

Cost Method

Allocation of Actuarial Present Value of Future Benefits for services prior and after the Measurement Date was determined using Entry Age Normal Level % of Salary method where:

- Service Cost for each individual participant, payable from date of employment to date of retirement, is sufficient to pay for the participant's benefit at retirement; and
- Annual Service Cost is a constant percentage of the participant's salary that is assumed to increase according to the Payroll Growth (3.0%).

Election Rate

Healthcare coverage election rate has been reduced from 60% to 35% based on recent City experience evaluated during the December 2016 experience study.

Spousal Coverage Election Rate

Spousal coverage election has been reduced from 70% for all employees to 40% for male employees and 20% for female employees based on recent City experience evaluated during the December 2016 experience study.

Payroll Growth

3.0%

GLOSSARY

Definitions

GASB 75 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 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.

2. **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 Service Cost and a Total OPEB Liability.

3. **Actuarially Determined Contribution** - A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in accordance with the parameters and in conformity with Actuarial Standards of Practice.

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. **Deferred Outflow / (Inflow) of Resources** – represents the following items that have not been recognized in the OPEB Expense:
    a. Differences between expected and actual experience of the OPEB plan
    b. Changes in assumptions
    c. Differences between projected and actual earnings in OPEB plan investments (for funded plans only)

6. **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.

7. **Funded Ratio** – The actuarial value of assets expressed as a percentage of the Total OPEB Liability.

Definitions – Continued

5. **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.

6. **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.

7. **OPEB** – Benefits (such as death benefits, life insurance, disability, and long-term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.

8. **OPEB Expense** – Changes in the Net OPEB Liability in the current reporting period, which includes Service Cost, interest cost, changes of benefit terms, expected earnings on OPEB Plan investments, reduction of active employees' contributions, OPEB plan administrative expenses, and current period recognition of Deferred Outflows / (Inflows) of Resources.

9. **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.

10. **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.

11. **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.

12. **Real Rate of Return** – the rate of return on an investment after adjustment to eliminate inflation.

Definitions – Continued

5. **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.

6. **Service Cost** – The portion of the Actuarial Present Value of projected benefit payments that are attributed to a valuation year by the Actuarial Cost Method.

7. **Substantive Plan** – The terms of an OPEB plan as understood by the employer(s) and plan members.

8. **Total OPEB Liability** – That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Benefits which is attributed to past periods of employee service (or not provided for by the future Service Costs).

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EXPERIENCE STUDY

December 2016

City of Tulsa

Nyhart Actuary & Employee Benefits

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Certification

This report is prepared for the purpose of reviewing the actual experience compared to the current actuarial assumptions used in the GASB Statement No. 45 (Accounting and Financial Reporting by Employers for Post-Employment Benefits Other Than Pensions). Recommendation of any changes proposed for health care coverage election rates and spousal coverage election rates are included in this report.

The information presented in this report is based on the information furnished to us by the Plan Administrator. All calculations have been made in accordance with generally accepted actuarial principles and practice.

To our knowledge there have been no significant events prior to the date of this report which could materially affect the results contained herein.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which 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.

Nyhart

Randy Gomez

Randy Gomez, FSA, MAAA

March 30, 2017

Background

An experience study is a summary of actual experience defined over a specified period of time. This study can analyze past economic experience (such as past inflation, real rates of return on assets, real salary growth in relative to inflation, and active employees' payroll growth) and/or past demographic experience (analysis of recent patterns of withdrawal, death, disability, retirement, election rate, and spousal coverage).

Employees are subject to decrements prior to meeting retirement eligibility requirements. The term **decrements** describe any circumstances that cause an active employee to leave the population under study. For example, an active employee may decrement due to termination (voluntary or involuntary), death (work related or not), disability (work related or not), or service retirement.

The term **exposure** defines the number of employees who are subject to a particular decrement. For example:

1. A new hire is exposed to withdrawal, death, and disability decrements, but not retirement since he has most likely not met the retirement eligibility requirements.

2. An employee who is eligible to retire is no longer exposed to termination or disability as upon his withdrawal from active employment, he will be considered a retiree instead of a terminated or disabled active employee. He will however be subject to death decrement.

So in a population of ten employees, out of which two have met the retirement eligibility requirements, the two retirement eligible employees will be subject to the retirement and death decrements while the other eight will be subject to the withdrawal, death, and disability decrements.

Process:

1. We first compute the raw rates of decrements based on historical experience. These rates are calculated by taking the total number of employees who left the population divided by the total number of employees exposed to a particular decrement.

2. The actuaries will analyze whether the raw rates of decrements are significantly different between gender or employee groups (which may be subject to different eligibility requirements).

3. Final recommended rates are usually smoothed based on historical experience presented and professional judgment on future behavior.

Data for this experience study was provided by the Plan Sponsor and it consists of a series of snapshots of retirement coverage election data taken as of June 30 of 2010 through 2016.

Executive Summary

This report presents the results of the experience study for the City of Tulsa, which is derived from historical demographic information as of June 30, 2010 through 2016. This is the first experience study completed for the City for measuring its retiree health obligations. Assumptions reviewed in this study are as follows:

1. Healthcare coverage election rate – the assumption used to project active employees who will continue health coverage with the City after their retirement.

2. Spousal coverage election rate – the assumption used to project the number of subscribers who will elect to have his/her spouse covered under the plan.

Note: for purposes of measuring OPEB liabilities, disability, termination, and retirement rates have been assumed to follow the appropriate pension fund's assumptions without adjustment. These will be updated for the fiscal year ending 2018 valuation per the experience study that will be performed for the pension fund in 2016.

Recommendations

We are recommending changes to all assumptions analyzed as described below:

1. Healthcare coverage election rate – fewer employees with coverage prior to retirement elect retiree health coverage than currently assumed. Therefore, we are proposing a reduction from 60% to 35% for this assumption. The City's liabilities are expected to decrease by 34% due to this change.

2. Spousal coverage election rate – fewer employees elect spousal coverage at retirement than currently assumed. We are proposing that this assumption is reduced from 70% for all employees to 40% for male employees and 20% for female employees. The City's liabilities are expected to decrease by 4% due to this change.

Healthcare Coverage Election Rate Analysis

In analyzing the healthcare coverage election rate assumption, we have reviewed the number of new retirements and those electing coverage in the past six fiscal years as shown below.

All actives[1]			
FY	# of New Retirements	# Elected Health Coverage	Health Care Election %
2010/11	96	46	48%
2011/12	76	39	51%
2012/13	71	32	45%
2013/14	98	50	51%
2014/15	89	24	27%
2015/16	72	18	25%
Average			**41%**
Average since 7/1/2014			**26%**

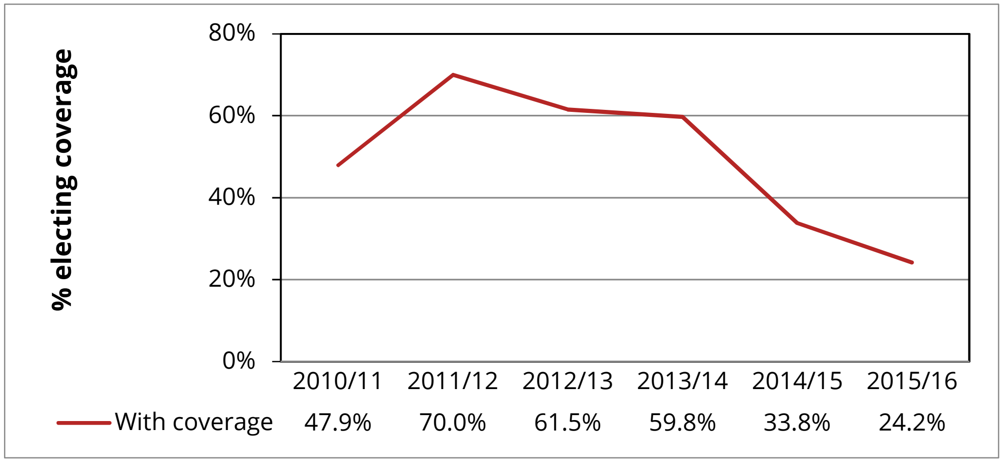
All actives with coverage prior to retirement[1]			
FY	# of New Retirements	# Elected Health Coverage	Health Care Election %
2010/11	96	46	48%
2011/12	50	35	70%
2012/13	52	32	62%
2013/14	82	49	60%
2014/15	71	24	34%
2015/16	62	15	24%
Average			**50%**
Average since 7/1/2014			**29%**

The current assumption is as follows:

- 60% of active employees with current coverage are assumed to continue coverage at retirement
- 0% of active employees without current coverage are assumed to elect coverage at retirement

As of July 1, 2014, retirees must pay the full cost of coverage, which has reduced the health care coverage election significantly. Based on this knowledge, and heavier weight on the results from 2014/15 and 2015/16, we are recommending that the current health care coverage election assumption be changed to the following:

- 35% of active employees with current coverage are assumed to continue coverage at retirement
- 0% of active employees without current coverage are assumed to elect coverage at retirement

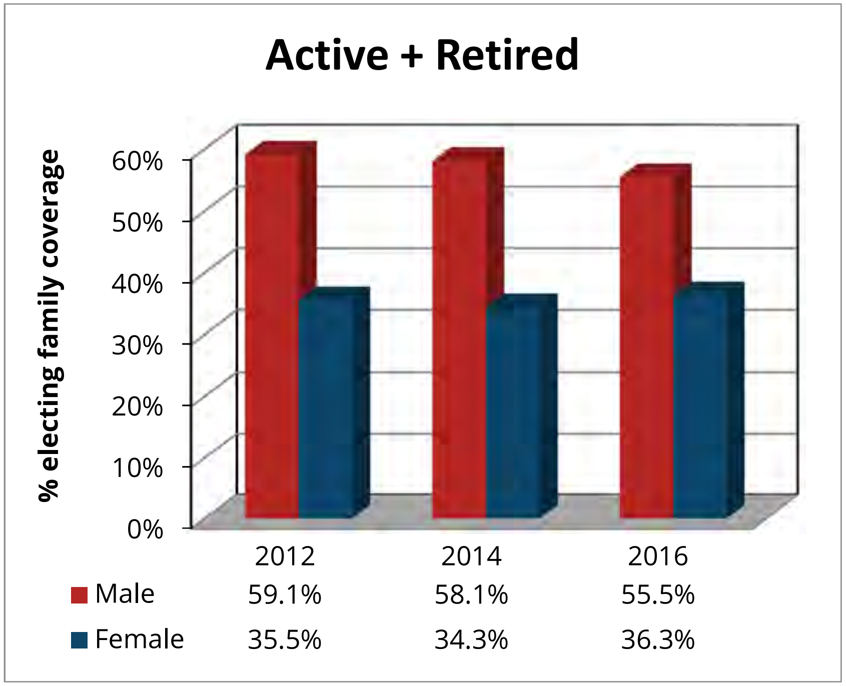


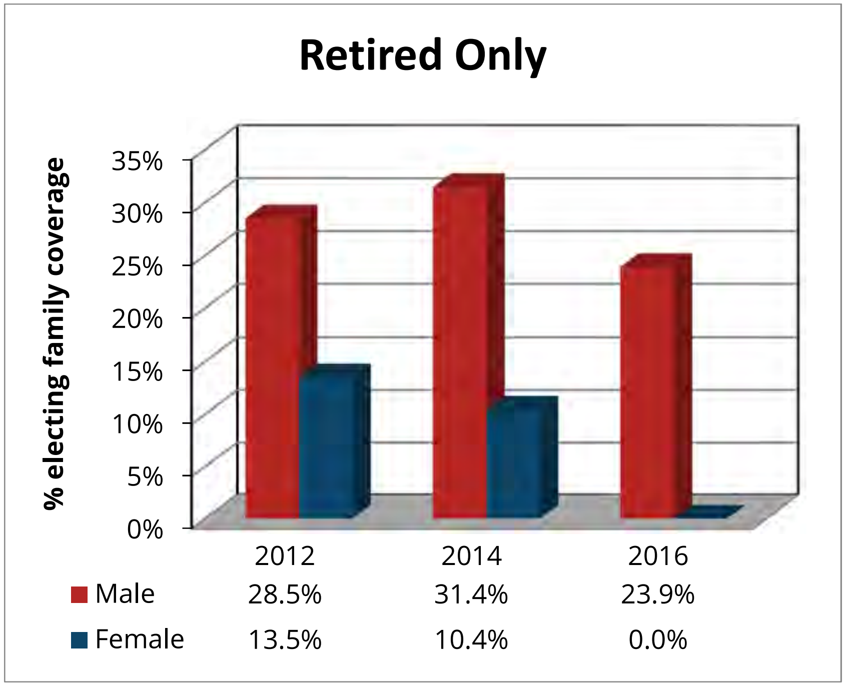
[1] Includes only those retiring prior to age 65.

Spousal Coverage Election Rate Analysis

For the spousal coverage election rate analysis, we have reviewed the percentage of participants (employees and retirees) electing spousal coverage by member's gender in the past three full valuations. Experience suggests that, on average, 58% of male participants and 35% of female participants elected spousal coverage. However, only 28% of male retirees and 8% of female retirees have elected spousal coverage. Based on the entire group, with more weight given to retired participants, we are recommending that the current spousal coverage election rate of 70% for all employees be reduced to 40% for male employees and 20% for female employees.

	% Participants with Spousal Coverage					
	Active		Retired		Total	
FYE	Male	Female	Male	Female	Male	Female
2012	63%	39%	29%	14%	59%	36%
2014	61%	38%	31%	10%	58%	34%
2016	57%	40%	24%	0%	56%	36%
Average	**60%**	**39%**	**28%**	**8%**	**58%**	**35%**





Impact on Actuarial Accrued Liabilities (AAL)

Below is the impact on the City's AAL as of July 1, 2015 after all of the assumption changes recommended in this report.

As of July 1, 2015	Current	Proposed Election Rates	Proposed Election and Spousal Rates
Future Retirees	$ 7,966,392	$ 4,647,062	$ 4,413,198
Current Retirees	$ 1,746,941	$ 1,746,941	$ 1,746,941
Total	$ 9,713,333	$ 6,394,003	$ 6,160,139
Incremental AAL Change			
Future Retirees		$ (3,319,330)	$ (233,864)
Current Retirees		$ 0	$ 0
Total		$ (3,319,330)	$ (233,864)
Cumulative AAL Change		**$ (3,319,330)**	**$ (3,553,194)**
Discount Rate[2]		4.0%	4.0%

[2] For the next full valuation, which will be disclosed under GASB 74/75, the discount rate will be based on a yield for 20-year tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

STATEMENT OF ACTUARIAL METHODS AND ASSUMPTIONS
(Effective as of January 1, 2016)

1. Investment Return Rate 7.50% per year, net of investment expenses. The 7.50% is composed of a 3.00% inflation component and an assumed 4.50% real rate of return.

2. Mortality Rates

   a. Post Retirement Non-Disabled: Healthy retirees and beneficiaries – The RP-2014 Combined Healthy Mortality Tables with Blue Collar Adjustments. Generational mortality improvements in accordance with Scale MP-2015 from the table's base year of 2014.

   b. Disabled Lives: Disabled annuitants – The RP-2014 Disabled Mortality Tables. Generational mortality improvements in accordance with Scale MP-2015 from the table's base year of 2014.

   c. Active Mortality: Active employees – The RP-2014 Employee Mortality Tables with Blue Collar Adjustments. Generational mortality improvements in accordance with Scale MP-2015 from the table's base year of 2014.

3. Retirement Rates

Load 50% at age first eligible for normal retirement less than age 63

Age	Rate (%) Normal Retirement	Early Retirement
49	5.0	
50-54	15.0	
55	12.0	4.0
56	12.0	6.0
57	12.0	6.0
58	12.0	6.0
59	12.0	6.0
60	20.0	4.0
61	11.0	4.0
62	30.0	15.0
63	20.0	10.0
64	20.0	10.0
65-69	25.0	
70-74	20.0	
75	100.0	

4. Incidence of Disability Rates

Age	Rate (%) Male & Female Participants
20	0.0004
25	0.0025
30	0.0099
35	0.0259
40	0.0494
45	0.0804
50	0.1188
55	0.1647
60	0.2180

5. Termination Rates

Credited Service	During the first 5 years of Service Withdrawal Rate (%) Male	Female
1	28.50	24.00
2	21.50	17.50
3	16.50	15.50
4	12.50	14.00
5	10.50	13.00

Years From Normal Retirement	After 5 years of Service Withdrawal Rate (%) Male	Female
1	0.79	0.94
2	0.91	1.07
3	1.03	1.22
4	1.17	1.39
5	1.33	1.57
6	1.54	1.82
7	1.78	2.10
8	2.13	2.52
9	2.52	2.98
10	2.94	3.47
11	3.44	4.07
12	3.98	4.70
13	4.55	5.39
14	5.17	6.11
15	5.82	6.88
16	6.51	7.70
17	7.15	8.46
18	7.75	9.16
19	8.33	9.85
20	9.16	10.84
21	9.58	11.33
22	9.72	11.50
23	9.88	11.68
24	9.96	11.78
25+	10.03	11.86

6. Salary Increase Rates

Rates are composed of a 3.00% inflation rate, a 1.00% productivity rate that applies to all, and a variable promotional/longevity component that is a function of the member's service.

Years of Service	Annual Promotional/ Longevity Component	Annual Total Salary Increase
1	7.75%	11.75%
2	6.00%	10.00%
3	3.00%	7.00%
4	2.00%	6.00%
5	1.75%	5.75%
6	1.75%	5.75%
7	1.50%	5.50%
8	1.50%	5.50%
9	1.25%	5.25%
10	1.00%	5.00%
11	0.75%	4.75%
12	0.75%	4.75%
13	0.50%	4.50%
14	0.50%	4.50%
15-20	0.25%	4.25%
21 or more	0.00%	4.00%

7. Total Payroll Growth Rate

3.00% per year, compounded annually. Assumes no membership growth.

8. Other Assumptions

a) Percent married: 100% of employees are assumed to be married.

b) Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

c) Cost of living escalators (COLA): None. Ad Hoc Colas are studied and granted based on the descretion of the Board.

d) Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.

e) Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

f) There will be no recoveries once disabled.

g) No surviving spouse will remarry and there will be no children's benefit.

h) Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

i) Administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment expenses. A 0.27% load is added to the employer normal cost to account for administrative expenses.

j) Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

k) Decrement timing: Decrements of all types are assumed to occur mid-year.

l) Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

m) Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

n) Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this Report, and the actual payroll payable at the time contributions are made.

o) Benefit Service: All members are assumed to accrue one (1) year of service each year. Exact fractional service is used to determine the amount of benefit payable.