The City of Bismarck Employees' Pension Plan

Actuarial Valuation

January 1, 2017

Arthur J. Gallagher & Co.

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The City of Bismarck Employees' Pension Plan

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ACTUARIAL CERTIFICATION
January 1, 2017 to December 31, 2017

In our opinion, the following report presents fairly the actuarial position of the plan in accordance with Generally Accepted Actuarial Principles and Practices. The purpose of this report is to develop a funding recommendation. Determinations for other purposes may be different; the results in this report should not be used for other purposes.

Our Actuarial Valuation has been completed with reliance upon participant and financial information provided to us by the City of Bismarck. We have reviewed the data provided to us for general reasonableness but did not audit the data. The accuracy of the information in this report is dependent on the quality and completeness of the data provided to us. Each assumption not specified by statute or regulations is reasonable taking into account the experience of the Plan, Plan-specific features, the purpose of the measurement and reasonable expectations.

The actuarial assumptions used in this report were selected by the City of Bismarck, in consultation with Gallagher Benefit Services, Inc. Based on a review of historic experience, Plan-specific features, and anticipated future outlook, the actuarial assumptions not specified by statute or regulation, each and in the aggregate, are reasonably related to the experience of the Plan and reflect a reasonable estimate of anticipated experience under the Plan.

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 or additional cost or contribution requirements based on the Plan's funded status); and changes in Plan provisions or applicable law. Due to the limited scope of this engagement, we did not complete an analysis of the potential range of such future measurements.

To the best of our knowledge, the information contained in this report is complete, accurate and in accordance with generally accepted actuarial principles as recommended by the American Academy of Actuaries. The actuary is an Enrolled Actuary and is qualified to render the actuarial opinion contained in this report.

Benjamin M. Holle, EA	Jesse K. Millner, EA, ASA
Enrollment Number 17-07400	Enrollment Number 17-08190
5/3/2017	5/3/2017
Date	Date

COMMENTARY

In this report we present the results of the January 1, 2017 Actuarial Valuation of the City of Bismarck Employees' Pension Plan. There were no changes in actuarial assumptions or plan provisions since the January 1, 2016 report.

Annual Recommended Contribution

We recommend that the City contribution be at least equal to the annual recommended contribution developed under the Entry Age Normal actuarial cost method. On this basis, a contribution of $2,454,235 (9.2% of covered payroll) is recommended for the 2017 plan year. The calculation of this contribution is illustrated in Exhibit 12.

Beginning with this year's recommendation we have included an explicit component to cover the coming year's expected administrative expenses ($290,949).

Expected City Contribution

The City commission has approved that the City contribution will be 10.4% of salary. The expected contribution for 2017 on this basis is $2,765,078.

Contribution Requirements

The valuation results are shown on page 3 in a comparison between 2016 and 2017. The 2016 calculation, developed in the first column, shows an UAAL of $9,190,764 and, with an actual City payment of $2,532,305 in 2016 and expected payment of $2,765,078 in 2017 plus future contributions of 10.4% of covered payroll, an amortization period of 10 years.

The calculation for 2017 shows an UAAL of $9,793,856 and, with an expected City payment of $2,765,078 for 2017, an amortization period of 14 years.

Reasons for the increased UAAL include a loss 0.4% loss on plan assets (2016 return of 7.1% vs. 7.5% assumption) and a 0.5% loss on the Accrued Liability. Please see page 16 for a further breakdown.

The increase in the amortization period from 10 to 14 years is largely due to the addition of administrative expenses in the recommended contribution.

Funding Ratio

Plan assets cover 113% of the Present Value of Accumulated Plan Benefits. More detail is contained on page 20. Last year plan assets covered 115% of the Present Value of Accumulated Plan Benefits. The Present Value of Accumulated Plan benefits is the value of benefits based only on salaries and service as of the valuation date and does not reflect the value of any future benefit accruals.

GASB No. 67 and No. 68

Gallagher will provide the required information for GASB No. 67 and No. 68 separately.

SUMMARY OF RESULTS

	1/1/16	1/1/17	Percent Change
1. Number of Participants			
(a) Active	455	469	3.1%
(b) Terminated vested	59	56	(5.1%)
(c) Retired	188	204	8.5%
(d) Total Participants = (a)+(b)+(c)	702	729	3.8%
2. Annual covered salaries for Participants under the assumed retirement age	$ 25,581,345	$ 26,587,289	3.9%
3. Actuarial Accrued Liability			
(a) Active Participants	$ 53,745,329	$ 53,052,199	(1.3%)
(b) Terminated vested Participants	2,611,920	2,721,076	4.2%
(c) Retired Participants	34,418,964	40,767,337	18.4%
(d) Total Actuarial Accrued Liability = (a)+(b)+(c)	$ 90,776,213	$ 96,540,612	6.4%
4. Actuarial Value of Assets	$ 81,585,449	$ 86,746,756	6.3%
5. Unfunded Actuarial Accrued Liability = (3)(d)-(4)	$ 9,190,764	$ 9,793,856	6.6%
6. Actual 2016/Expected 2017 annual financial support by City	$ 2,532,305	$ 2,765,078	9.2%
7. Annual Recommended Contribution	$ 2,016,747	$ 2,454,235	21.7%
8. Amortization period at expected level of funding	10 years[1]	14 years[2]	40.0%

[1] Amortization period based on City Contributions of $2,532,305 in 2016, $2,765,078 in 2017, and increasing due to total salary growth at the rate of 3.0% annually thereafter.

[2] Amortization period based on $2,765,078 contribution for 2017, and increasing due to total salary growth at the rate of 3.0% annually thereafter.

Input Information

Arthur J. Gallagher & Co.

EXHIBIT 1
Summary of Plan Provisions

The following summary has been prepared for valuation purposes only. It outlines the Provisions found in Chapter 9-07 (City Employees' Pension) necessary to perform the Actuarial Valuation, as interpreted by Gallagher Benefit Services Inc.

Definitions

Actuarial Equivalence Factors:	In calculating the actuarial equivalence of one form of benefit to another, the interest rate to be used shall be 7.0% and the mortality table to be used shall be the "applicable mortality table" as defined by Section 417(e)(3) of the Code (9-07-10).
Average Basic Monthly Compensation:	The average of the monthly base compensation of a Participant over the highest 36 month period of employment. Monthly base compensation excludes overtime, bonuses, severance payments, and other remuneration in excess of base compensation (9-07-15(1)).
Effective Date of the Plan:	January 1, 1966.
Early Retirement Date:	Participants who have completed 60 consecutive months of contributing service and have attained age 50 are eligible for a monthly pension benefit (9-07-15(2)).
Membership Fee:	Every full-time employee of the City of Bismarck except police officers and fire fighters shall be assessed and required to pay an amount of 5.0% of their basic salary (9-07-01).
Normal Form of Benefit:	Married Participants receive a Joint & Two-Thirds to Survivor annuity. Single Participants receive a Life Only annuity.
Normal Retirement Date:	Participants who have attained age 62 are eligible for a monthly pension benefit (9-07-15(1)).
Plan Year:	January 1st through December 31st (9-07-08).
Recognized Service:	Full and fractional years of contributing service during which the employee contributed to the fund (9-07-23). Military service will be included as part of the period of service with the City provided that the period does not exceed 5 years and the employee pays into the fund 5.0% of the lesser of the last full year's salary paid by the City or military salary for each year of military service (9-07-05).

EXHIBIT 1 (Continued)
Summary of Plan Provisions

Plan Provisions

Eligibility: Every full-time employee, other than members of the Police Department who are sworn officers, members of the firefighter's relief association, and employees who perform fire suppression duties. (9-07-11).

Normal Retirement Benefit: Participants serving until the Normal Retirement Date are eligible for a monthly pension benefit computed by multiplying his or her highest 36 months of Average Basic Monthly Compensation times 1.75% times his or her number of full and fractional years of Recognized Service prior to January 1, 2005 plus 2.25% times his or her number of full and fractional years of Recognized Service after December 31, 2004. (9-07-15(1)).

Early Retirement Benefit: The monthly pension benefit shall be equal to the Normal Retirement Benefit actuarially reduced for payments commencing prior to age 62 (9-07-15(2)). The reduction factors are as follows:

Age	Factor	Age	Factor
50	.4287	57	.6841
51	.4567	58	.7353
52	.4870	59	.7918
53	.5199	60	.8542
54	.5557	61	.9233
55	.5947	62	1.000
56	.6373		

Termination Benefit: After 60 consecutive months of contributing service and termination of employment, a Participant may elect a deferred retirement benefit to commence at an elected age 50 to 62. The Participant's deferred benefit shall equal the Normal Retirement Benefit (based on service and compensation to the date of termination) actuarially reduced for early commencement (9-07-15(3)).

EXHIBIT 1 (Continued)
Summary of Plan Provisions

Death Benefit:

The surviving spouse (while unmarried) receives 2/3 of the actuarially reduced pension to which the Participant would have been entitled, but not less than $65 per month provided the Participant served at least 60 consecutive months of contributing service (9-07-15(4)).

The surviving spouse has the option to elect a refund of contributions in lieu of the above-mentioned benefit (9-07-15(5)).

If there is no surviving spouse, the Participant's contributions are paid to the Participant's estate (9-07-15(6)).

Refund of Contributions:

Any Participant who has contributed to the plan and terminates employment before being entitled to a pension shall be entitled to a refund of all contributions made by him to the pension system with accumulated interest. Interest of 5% per year will be credited on such contributions made after July 1, 1972. Interest of 2.5% per year will be credited on such contributions made prior to July 1, 1972.

Any Participant electing a refund of contributions forfeits all rights to any other form of benefit under this plan (9-07-14).

Cost of Living Adjustments:

Persons receiving pension payments shall be eligible for cost of living adjustments in an amount determined by the Board of Trustees. The adjustment may not exceed the lesser of the City employees' salary adjustment or 3% (9-07-16).

EXHIBIT 2
Census Summary and Reconciliation

	1/1/16	1/1/17	Percent Change
Active Participants			
▪ Number of Participants			
– Fully vested	260	255	(1.9%)
– Non-vested	195	214	9.7%
– Total	455	469	3.1%
▪ Average age	46.8	46.5	(0.6%)
▪ Average service	11.4	10.9	(4.4%)
▪ Average salary	$ 53,782	$ 54,219	0.8%
Terminated Vested Participants			
▪ Number of Participants	59	56	(5.1%)
▪ Average age	47.7	48.3	1.3%
▪ Average years since termination	5.4	6.4	18.5%
▪ Average monthly benefit at Normal Retirement	$ 713.85	$ 768.08	7.6%
Retired Participants			
▪ Number of Participants	188	204	8.5%
▪ Average age	72.7	72.8	0.1%
▪ Average years since retirement	9.5	9.5	0.0%
▪ Average monthly benefit	$ 1,667.77	$ 1,807.98	8.4%

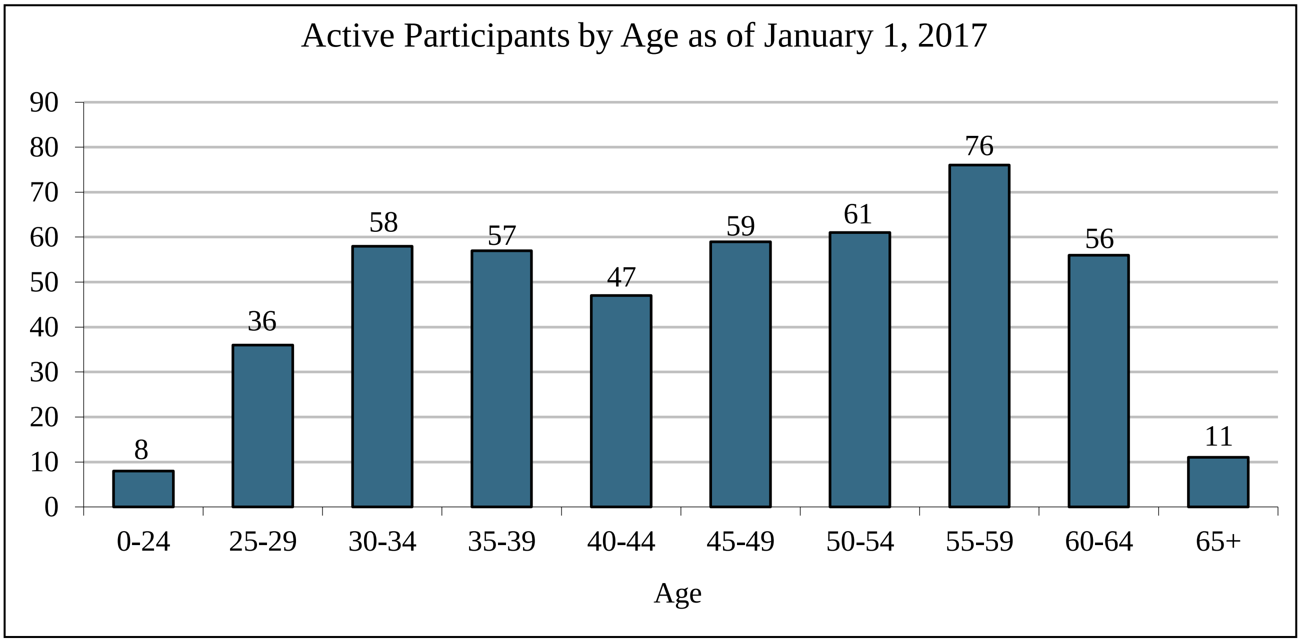
EXHIBIT 3
Participant Reconciliation

The following information provides the reconciliation from January 1, 2016 to January 1, 2017 of Plan Participants.

	Active	Terminated Vested	Retired	Disabled	Beneficiary	Total
1/1/2016 Participants	455	59	154	0	34	702
New Participants	43	-	-	-	-	43
Rehired	2	-	-	-	-	2
Terminated vested	(3)	3	-	-	-	-
Terminated non-vested	(16)	-	-	-	-	(16)
Retired	(16)	(3)	19	-	-	-
Disabled	-	-	-	-	-	-
Died with beneficiary	(1)	1	(1)	-	1	-
Died without beneficiary	-	-	(1)	-	(2)	(3)
Benefit stopped	-	-	-	-	-	-
Paid-out lump sum	-	(3)	-	-	-	(3)
Data corrections	5	(1)	-	-	-	4
1/1/2017 Participants	469	56	171	0	33	729

During 2016, the total Participant count increased by 27 due to 43 new Participants, 2 Participants that were rehired and 5 active Participant data corrections (additions) offset by 16 Participants that terminated employment and received a return of their employee contributions, 3 Participant deaths with no beneficiary and 1 terminated vested data correction (deletion). There were 19 Participants that retired, 3 Participants that moved from active to terminated vested status, 1 Participant death with immediate benefits to a beneficiary and 1 Participant death with deferred benefits due to a beneficiary.

EXHIBIT 4
Active Participant Data



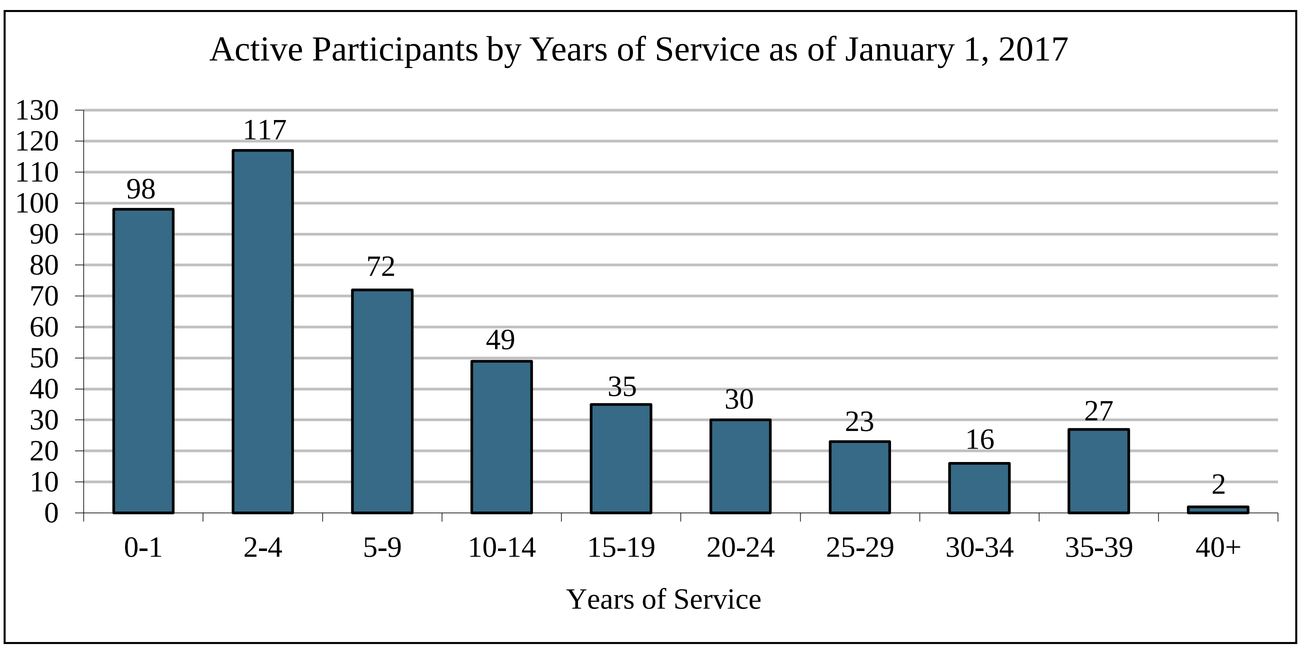
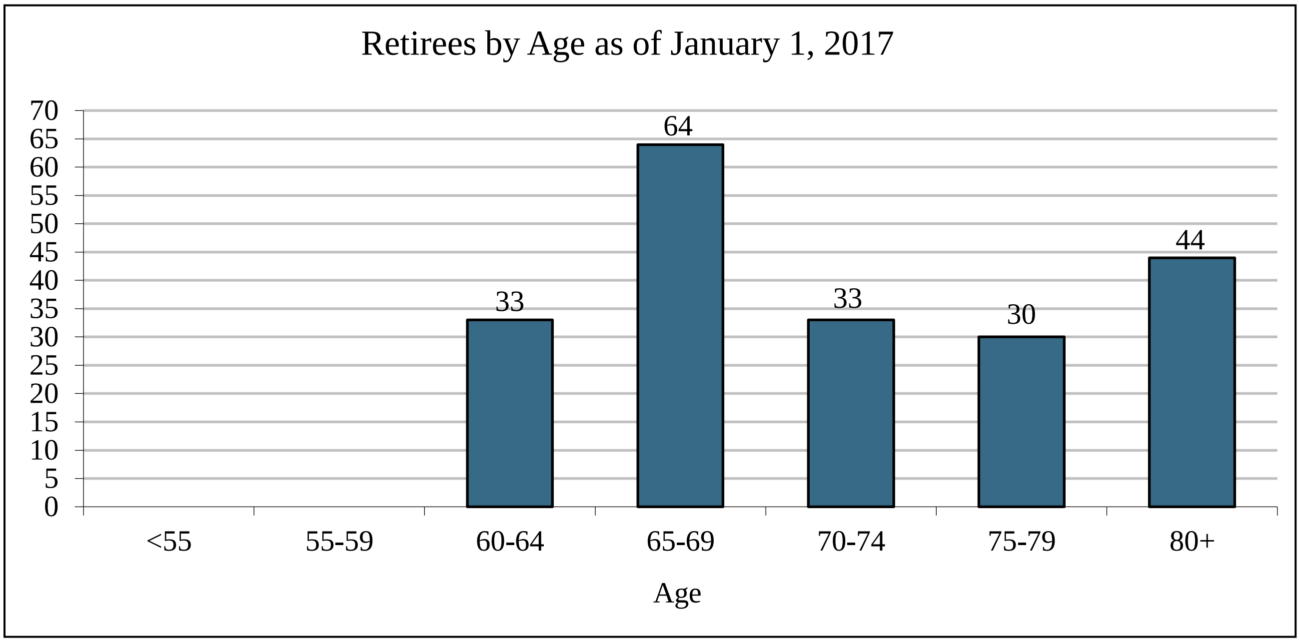


EXHIBIT 5
Retired Participant Data



Retirees include those on service retirement, disability retirement and beneficiaries with survivor benefits.

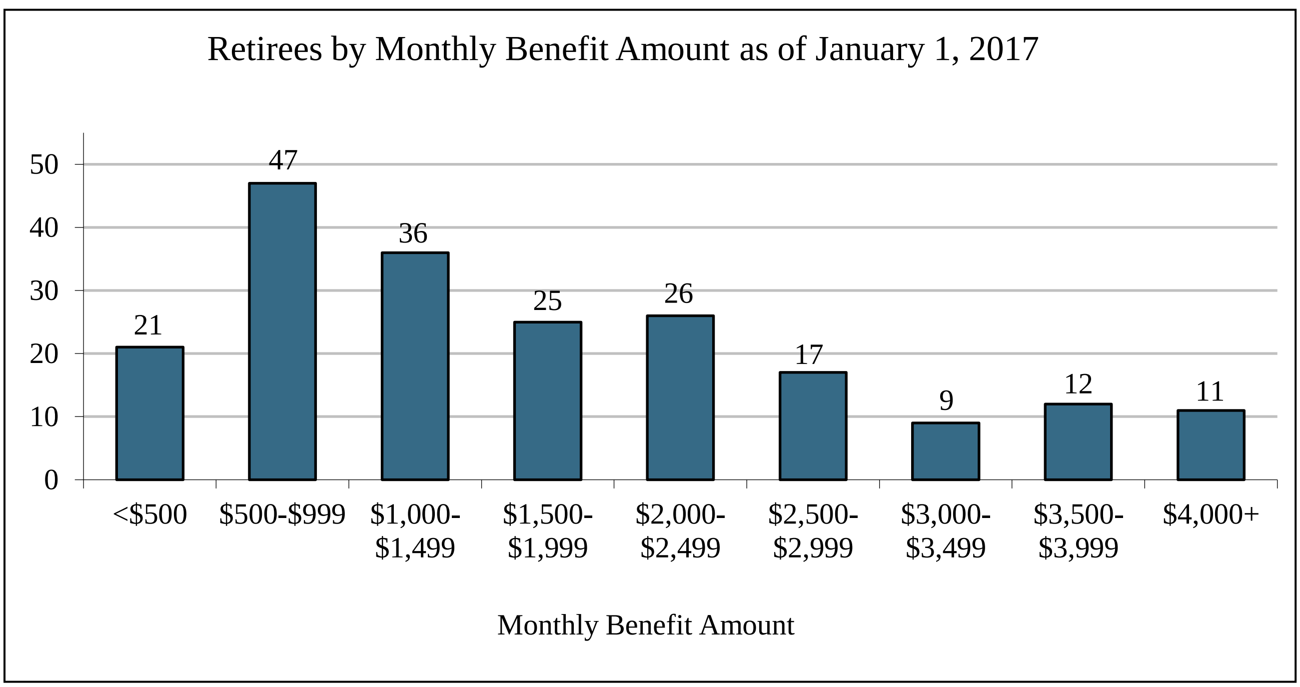
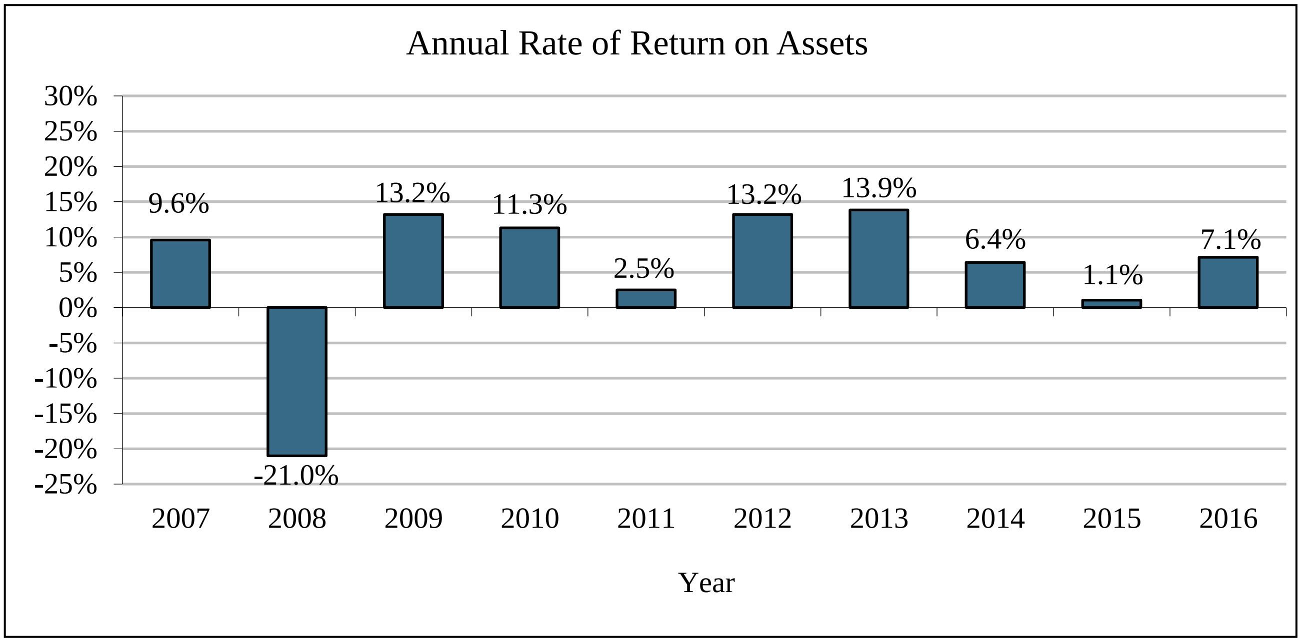


EXHIBIT 6
Reconciliation of Assets

1. Beginning Balance as of January 1, 2016			$ 81,585,133
2. Revenue			
(a) Employer's Contribution			
(i) Park & Rec. Contribution	$	269,065	
(ii) Department Contribution		2,263,240	
(iii) Total City Contribution	$	2,532,305	
(b) Employee's Contribution		1,289,288	
(c) Investment Income (Loss)		5,800,080	
(d) Total Revenue			$ 9,621,673
3. Expenditure			
(a) Pension Benefit Payments	$	4,075,638	
(b) Professional & Legal Fees		792	
(c) Management Consulting		23,315	
(d) Administration Fees		55,158	
(e) Investment Expense		199,376	
(f) Security Lending Expense		2,416	
(g) Pension Refund		101,942	
(h) Postage		1,413	
(i) Total Expenditure			$ 4,460,050
4. Net Income (Loss)			$ 5,161,623
5. Ending Balance as of December 31, 2016			$ 86,746,756

Total assets increased $5,161,623 during 2016. This increase was from a net cash flow (total contributions less expenditures) of ($638,457), and an investment income of $5,800,080. Some components were rounded up or down to ensure that the totals would add correctly. The net rate of return after expenses was 7.1%.

EXHIBIT 7
Historical Asset Information



Rates of return are determined after expenses.

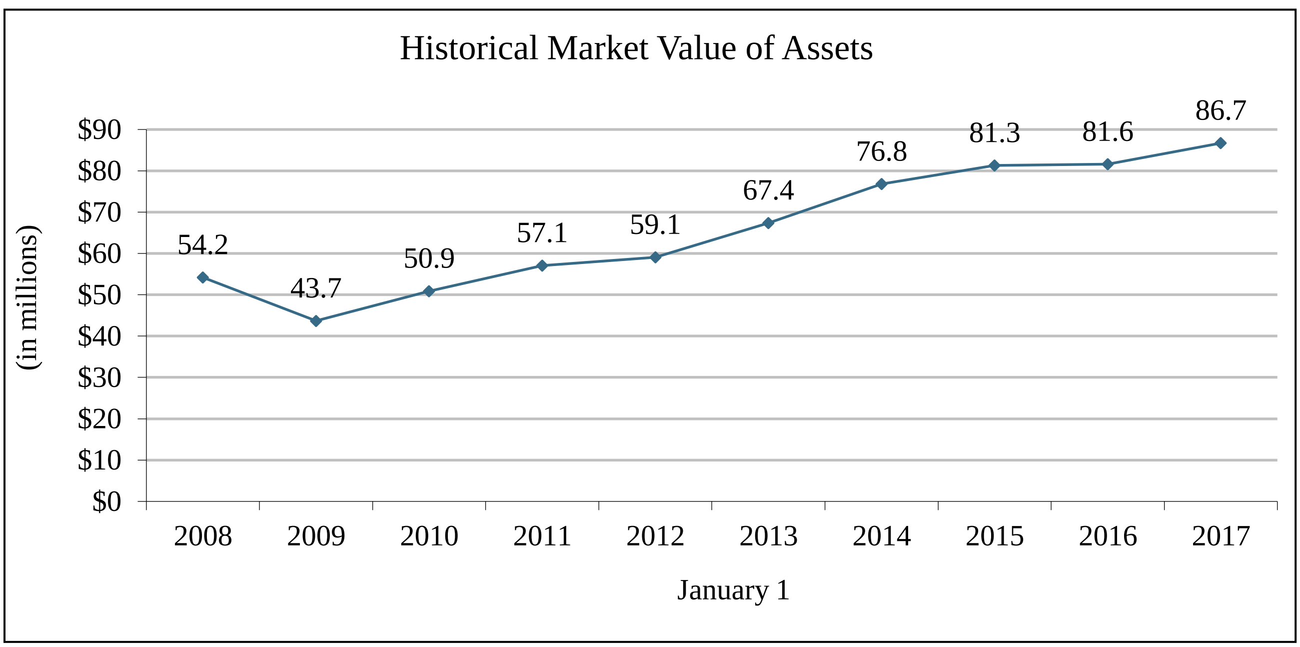


EXHIBIT 8
Actuarial Assumptions and Cost Methods

Economic Assumptions

Investment Return: The Fund is assumed to earn 7.5% per year after expenses.

Salary Scale: Active Participant Salaries are assumed to increase at rates according to the following table:

Years of Service	Rate
0-9	5.0%
10+	4.0%

Inflation: The amortization of the Unfunded Actuarial Accrued Liability is determined as a level percent of payroll using a 3% total payroll growth assumption.

Demographic Assumptions

Retirement: Active Participant retirement rates are based on plan experience between 1/1/05 and 12/31/11 (See Illustrations on Page 14).

Mortality: Mortality rates are based on the 1994 Group Annuity Mortality Table (See Illustrations on Page 14).

Disability: None.

Withdrawal: Active Participant termination rates are based on plan experience between 1/1/05 and 12/31/11 (See Illustrations on Page 14).

Spouse Age: Male Participants are assumed to be 3 years older than female spouses. Female Participants are assumed to be 3 years younger than male spouses.

Marriage Rate: 85% of Participants are assumed to be married.

EXHIBIT 8 (Continued)
Actuarial Assumptions and Cost Methods

Cost Methods

Form of Benefit: Married Participants receive their benefit in the form of a Joint and Two Thirds to Survivor annuity. Single Participants receive their benefit in the form of a Life Only annuity.

Actuarial Asset Value: The Actuarial Value of Assets is equal to the Market Value of Assets reserved for employee pension benefits.

Expenses: Plan expenses are assumed to be 3.0% higher than the prior year and are added to the recommended contribution.

Funding Method: The contribution requirement is determined using the Entry Age Normal actuarial cost method.

Illustrations

	Rate of Mortality (per 1,000)	
Age	Male	Female
25	0.66	0.29
30	0.80	0.35
35	0.85	0.48
40	1.07	0.71
45	1.58	0.97
50	2.58	1.43
55	4.43	2.29

	Rate of Disability (per 1,000)	
Age	Male	Female
25	0.00	0.00
30	0.00	0.00
35	0.00	0.00
40	0.00	0.00
45	0.00	0.00
50	0.00	0.00
55	0.00	0.00

	Rate of Withdrawal (per 1,000)	
Age	Male	Female
20-24	80	200
25-29	80	150
30-34	80	150
35-39	80	80
40-44	25	80
45-49	20	60
50-54	10	30
55+	0	0

	Rate of Retirement (per 1,000)	
Age	Male	Female
62-65	200	200
66	400	400
67	600	600
68	800	800
69+	1,000	1,000

Contribution Information

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EXHIBIT 9
Development of Unfunded Actuarial Accrued Liability

		1/1/17
1. Actuarial Accrued Liability		
(a) Participants receiving benefits	$	40,767,337
(b) Terminated vested Participants		2,721,076
(c) Active Participants		53,052,199
(d) Total Participants = (a)+(b)+(c)	$	96,540,612
2. Adjustment for cost of living adjustments		0
3. Adjustment for assumption changes		0
4. Actuarial Accrued Liability after adjustments = (1)(d)+(2)+(3), not less than zero	$	96,540,612
5. Actuarial Value of Assets		86,746,756
6. Unfunded Actuarial Accrued Liability as of January 1, 2017 = (4)-(5)	$	9,793,856

Under the Entry Age Normal actuarial cost method, the Unfunded Actuarial Accrued Liability is recalculated each year. The Actuarial Accrued Liability is valued using participant data, plan provisions and assumptions as of the valuation date. Past demographic or economic experience different than assumed is called an actuarial gain or loss and is reflected in the Unfunded Actuarial Accrued Liability. A breakdown of actuarial gains and losses from the past year is shown on the next page.

The Unfunded Actuarial Accrued Liability is amortized over a fixed period of time. The amortization period was reset at 30 years as of January 1, 2009. Therefore, there are 22 years remaining in the amortization period. The resulting amortization payment is a component of the recommended contribution.

The Unfunded Actuarial Accrued Liability is scheduled to be reduced to $0 over the amortization period. However, this schedule is met only if all assumptions are met and the actual employer contribution equals the recommended contribution each year. If assumptions are not met, an actuarial gain or loss will either decrease or increase the UAAL. Also, if the employer contribution exceeds the recommended contribution, the UAAL will be reduced more rapidly. Alternatively, if the employer contribution is less than the recommended contribution, the UAAL will reduce more slowly or even increase.

EXHIBIT 10
Development of Actuarial (Gain)/Loss

Development of Liability (Gain) or Loss

Actual Actuarial Liability as of January 1, 2016		$ 90,776,213
Expected changes		
▪ Normal cost	$ 2,602,337	
▪ Interest at 7.5%	7,003,391	
▪ Cost of living adjustment	0	
▪ Benefit payments with interest to year end	(4,334,239)	
▪ Total expected changes		$ 5,271,489
Expected Actuarial Liability as of January 1, 2017		$ 96,047,702
Actual Actuarial Liability as of January 1, 2017		96,540,612
Actuarial Liability (gain) or loss		$ 492,910

Breakdown of Actuarial Liability (gain) or loss by source	
▪ Participant experience different than assumed for death, retirement, termination, disability and other amounts	$ 537,344
▪ Inactive mortality	(44,434)
▪ New entrants	0
▪ Assumption changes	N/A
Actuarial Liability (gain) or loss	$ 492,910

Development of Asset (Gain) or Loss

Market Value of Assets as of January 1, 2016	$ 81,585,133
▪ Interest at 7.5%	6,118,885
▪ Actual contributions with interest to year-end	3,964,903
▪ Actual benefit payments with interest to year-end	(4,334,239)
▪ Actual expenses with interest to year-end	(293,063)
Expected value of assets as of January 1, 2017	$ 87,041,619
Actual value of assets as of January 1, 2017	86,746,756
Asset (gain) or loss	$ 294,863

A (gain)/loss occurs when actual demographic or economic experience is different from the valuation assumptions. For example, if salary increases are greater (lower) than expected the liability will go up (down). During 2016, an actuarial liability loss of $492,910 and an asset loss of $294,863 resulted in an increase in UAAL of $787,773 more than expected.

EXHIBIT 11
Recommended Amortization Schedule

Year	Unfunded Liability at Beginning of Year	Annual Amortization Payment	Unfunded Liability at End of Year
2017	$ 9,793,856	$ 672,455	$ 9,805,506
2018	9,805,506	692,629	9,796,342
2019	9,796,342	713,408	9,764,155
2020	9,764,155	734,810	9,706,545
2021	9,706,545	756,854	9,620,918
2022	9,620,918	779,560	9,504,460
2023	9,504,460	802,947	9,354,126
2024	9,354,126	827,035	9,166,623
2025	9,166,623	851,846	8,938,385
2026	8,938,385	877,402	8,665,557
2027	8,665,557	903,724	8,343,970
2028	8,343,970	930,835	7,969,120
2029	7,969,120	958,761	7,536,137
2030	7,536,137	987,523	7,039,759
2031	7,039,759	1,017,149	6,474,306
2032	6,474,306	1,047,664	5,833,641
2033	5,833,641	1,079,093	5,111,138
2034	5,111,138	1,111,466	4,299,647
2035	4,299,647	1,144,810	3,391,450
2036	3,391,450	1,179,155	2,378,218
2037	2,378,218	1,214,529	1,250,965
2038	1,250,965	1,250,965	0

The Annual Amortization Payment is determined by amortizing the Unfunded Actuarial Accrued Liability (UAAL) over 22 years as a level percentage of total payroll. Total payroll is assumed to increase at 3% per year.

This schedule is in accordance with Governmental Accounting Standards Board No. 27 guidelines. The City commission has approved that the City contribution will be 10.4% of salary. Please see Exhibit 13 for more details.

EXHIBIT 12
Development of Annual Recommended Contribution

Annual Recommended Contribution (Dollar Amounts)

	2016	2017
1. Total Normal Cost	$ 2,602,337	$ 2,731,493
2. Expected Administrative Expenses	N/A	290,944
3. Expected employee contribution	(1,279,067)	(1,329,364)
4. City Normal Cost	$ 1,323,270	$ 1,693,073
5. Amortization of Unfunded Actuarial Accrued Liability	620,583	672,455
6. Total annual recommended contribution	$ 1,943,853	$ 2,365,528
7. Interest to mid-year at 7.5%	72,894	88,707
8. Recommended contribution, mid-year = (6)+(7)	$ 2,016,747	$ 2,454,235

Annual Recommended Contribution (As a Percent of Payroll)

	2016	2017
1. Total Normal Cost	10.2%	10.3%
2. Expected Administrative Expenses	N/A	1.1%
3. Expected employee contribution	(5.0%)	(5.0%)
4. City Normal Cost	5.2%	6.4%
5. Amortization of Unfunded Actuarial Accrued Liability	2.4%	2.5%
6. Total annual recommended contribution	7.6%	8.9%
7. Interest to mid-year at 7.5%	0.3%	0.3%
8. Recommended contribution, mid-year = (6)+(7)	7.9%	9.2%

Percent of Payroll results are based on total expected covered payroll of $25,581,345 in 2016 and $26,587,289 in 2017. The expected city contribution of 10.4% of covered payroll is more than the 2017 annual recommended contribution of 9.2%.

EXHIBIT 13
10.4% of Payroll Funding Amortization Schedule

Year	Unfunded Liability B.O.Y.	Amortization Payment E.O.Y.	Unfunded Liability E.O.Y.
2017	$ 9,793,856	$ 1,007,196	$ 9,521,199
2018	9,521,199	1,037,412	9,197,877
2019	9,197,877	1,068,534	8,819,183
2020	8,819,183	1,100,590	8,380,032
2021	8,380,032	1,133,608	7,874,926
2022	7,874,926	1,167,616	7,297,929
2023	7,297,929	1,202,645	6,642,629
2024	6,642,629	1,238,724	5,902,102
2025	5,902,102	1,275,886	5,068,874
2026	5,068,874	1,314,162	4,134,877
2027	4,134,877	1,353,587	3,091,405
2028	3,091,405	1,394,195	1,929,066
2029	1,929,066	1,436,021	637,725
2030	637,725	685,554	-

The City commission has approved that the City contribution will be 10.4% of salary. The expected contribution for 2017 on this basis is $2,765,078. The Annual Amortization Payment shown above represents the total expected City contribution available to reduce the UAAL at the end of that year after a reduction for payment of the annual City normal cost.

As shown above, a City contribution of 10.4% of salary per year will amortize the UAAL over 14 years.

Accounting Information

Arthur J. Gallagher & Co.

EXHIBIT 14
Statement of Accumulated Plan Benefits

A measure of the degree of progress made in funding any plan is a comparison between the Accumulated Benefit Liability and the assets accumulated to date. The Accumulated Benefit Liability measures the present value of future benefit payments. However, benefit payments are based only on service and salaries earned as of the valuation date. This liability amount is less than the Actuarial Accrued Liability used to determine the annual recommended contribution, because the AAL anticipates future salary increases for active participants. The liabilities are determined using the regular valuation assumptions. The table below shows the actuarial present value of the Accumulated Benefit Liability.

Actuarial Present Value of Accumulated Plan Benefits (PVAB)

	1/1/16	1/1/17
Vested accrued benefits		
▪ Participants currently receiving payments	$ 34,418,964	$ 36,113,810
▪ Other Participants	36,077,983	40,767,337
Total vested accrued benefits	$ 70,496,947	$ 76,881,147
Non-vested accrued benefits	250,387	227,019
Total accrued benefits	$ 70,747,334	$ 77,108,166

Statement of Changes in Accumulated Plan Benefits

Beginning value, January 1, 2016	$	70,747,334
Increases (Decreases)		
▪ Cost of living adjustment	$	0
▪ Change in actuarial assumptions		0
▪ Benefits accumulated and (gain)/loss		5,386,189
▪ Increase for interest due to decrease in discount period		5,152,223
▪ Benefits paid		(4,177,580)
▪ Net increase (decrease)	$	6,360,832
Ending Value, January 1, 2017	$	77,108,166

The ratio of assets to the above liabilities (known as the Funding Ratio) represents the degree to which Accumulated Benefit liability has been funded. As of January 1, 2017, the Market Value of Assets was $86,746,756. The table below outlines the funding ratios.

Funding Ratio (Assets/PVAB)	
Vested accrued benefits	113%
Total accrued benefits	113%