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## City of Ladue Firemen and Policemen's Pension Plan

### Actuarial Valuation Report January 1, 2017

**Prepared by**

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Consulting Actuary

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Introduction and Purpose**

In this report, we present the results of the January 1, 2017 actuarial valuation for the City of Ladue Firemen and Policemen's Pension Plan. The report has been prepared at the request of the City for the sole use of the Board of Trustees of the City of Ladue Firemen and Policemen's Pension Plan and the City of Ladue as the contributing plan sponsor.

**PURPOSES OF THE VALUATION**

The actuarial valuation of the Plan is intended to accomplish several purposes:

- The determination of the recommended level of employer contributions for the 2017 calendar year
- Assessment of the relative funded position of the plan on an ongoing basis, i.e., through a comparison of plan assets and projected plan liabilities

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Actuarial Certification**

As requested, we have performed an actuarial valuation of the City of Ladue Firemen and Policemen's Pension Plan as of January 1, 2017 for determining contributions for the calendar year ending December 31, 2017. Our findings are set forth in this actuary's report. This report reflects the benefit provisions in effect on January 1, 2017.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City and The Commerce Trust Company. This information includes, but is not limited to, plan provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the Plan have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Plan and reasonable expectations).

This valuation report is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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 our assignment, we did not perform an analysis of the potential range of future measurements. The City has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in this report.

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Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the City. The calculations in the enclosed report have been made on a basis consistent with our understanding of the City's funding requirements and goals as well as our understanding of the plan provisions described on pages 18-21 of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

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- (b) The City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,



Michael J. Zwiener, FSA  
Consulting Actuary  
Joint Board Enrollment #17-03686

MJZ/WDW/jcr



William D. Wunningham, EA  
Actuary  
Joint Board Enrollment #17-06367

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**The City of Ladue Firemen and  
Policemen’s Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Discussion of Valuation Results**

**1. Contribution Recommendation**

The results of this valuation are used to determine recommended contribution rates to the Plan for the 2017 calendar year. A comparison of recommended contribution rates for the current and immediately preceding valuations is shown below:

	<u>Actuarial Valuation as of</u>	
	<u>January 1, 2016</u>	<u>January 1, 2017</u>
Applies to Calendar Year	01/01/16-12/31/16	01/01/17-12/31/17
Recommended Contribution	\$1,610,554	\$1,787,046
Actual Contribution	\$1,610,554	N/A

The recommended contribution increased from \$1,610,544 to \$1,787,046. The primary reason for the increase was a change in assumed mortality and retirement rates.

**2. Plan Assets**

The unaudited market value of plan assets increased from \$29,355,447 at January 1, 2016 to \$30,994,503 at January 1, 2017. A balance sheet and statement of income and disbursements are presented on pages 8 and 9, respectively. The net market rate of return was a gain of 7.1% for the period.

The actuarial value of assets increased from \$30,147,660 at January 1, 2016 to \$31,925,044 at January 1, 2017. The development of the January 1, 2017 actuarial value of assets is presented on page 10. The net actuarial rate of return for the period was 7.4% vs. the assumed rate of 7.0%.

Due to the asset smoothing method used, there are \$930,541 of investment losses that have not yet been recognized in the Actuarial Value of Assets (see page 10).

**3. Actuarial Assumptions, Methods and Plan Provisions**

The rate of retirement assumption at age 55 was changed from 25% to 50%.

The mortality assumption was updated to the RP 2014 mortality tables for employees and annuitants projected generationally under improvement scale MP 2016.

All other actuarial assumptions, methods and plan provisions remained the same as the prior year. Descriptions of these can be found on pages 15-21.

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4. **Plan Population**

The number of active members included in the valuation increased from 57 in the previous valuation to 58 in the current valuation. The number of members in pay status increased from 62 in the previous valuation to 64. The number of deferred vested members decreased from 5 to 4. A detailed reconciliation can be found on page 24.

5. **GASB Statement Changes**

GASB Statement Nos. 25 and 27 have been replaced with Statement Nos. 67 and 68 effective for the Plan fiscal year ending 12/31/2014 with respect to reporting by the Plan and fiscal year ending 12/31/2015 for reporting by the City. The GASB disclosures are presented in a separate report.

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Summary of Valuation Results**

	<u>Valuation Date</u> <u>January 1, 2016</u>	<u>Valuation Date</u> <u>January 1, 2017</u>
Number of Members:		
Active	57	58
Receiving Payments	62	64
Terminated Vested	5	4
Terminated Nonvested Refunded	<u>0</u>	<u>0</u>
Total	124	126
Annual Payroll of Members under Normal Retirement Age	4,630,901	4,825,405
Market Value of Assets	29,355,447	30,994,503
Actuarial Value of Assets	30,147,660	31,925,044
Present Value of Future Benefits	45,949,745	48,981,140
Entry Age Normal Accrued Liability	38,655,458	41,107,506
Unfunded Entry Age Normal Accrued Liability	8,507,798	9,182,462
Entry Age Normal Cost	655,485	738,987
Expected Employee Contributions (reflects first 3% of contributions only)	141,794	147,423
Assumed Expenses	25,000	25,000
Recommended Contribution, with Interest	1,610,554	1,787,046
Recommended Contribution as a Percentage of Covered Payroll	34.78%	37.03%

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**The City of Ladue Firemen and  
Policemen's Pension Plan**  
**January 1, 2017 Actuarial Valuation**

**Statement of Assets as of January 1, 2017**

<u>Assets</u>	<u>Market Value</u>
1. Cash and Equivalents	\$633,747
2. Fixed Income Investments	8,628,638
3. Corporate Stocks - Domestic	15,266,823
4. Corporate Stocks - International	5,875,626
5. Alternative Investments	559,954
6. Accounts Receivable	29,715
Total Assets	30,994,503
 <u>Liabilities</u>	
None	
 Net Assets	 <u>\$30,994,503</u>

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Statement of Income and Disbursements**

1. Market Value of Assets as of January 1, 2016	\$29,355,447
2. Income:	
a. City Contributions	1,610,554
b. Employee Contributions	293,921
c. Investment Income (Including Realized and Unrealized Capital Gains/Losses)	1,542,464
d. Interest and Dividends	586,122
e. Other Income	24,922
f. Change in Accrued Income	<u>7,329</u>
g. Total Income	4,065,312
3. Expenses	
a. Employee Benefit Distributions	2,335,307
b. Investment Expenses	90,849
c. Administrative Expenses	<u>100</u>
d. Total Expenses	2,426,256
4. Net Increase (Decrease) = (2g) - (3d)	1,639,056
5. Market Value of Assets as of December 31, 2016 = (1) + (4)	\$30,994,503
6. Rate of Return	7.1%

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Development of Actuarial Value of Assets**

1. Actuarial Value of Assets as of January 1, 2016	\$30,147,660
2. Contributions	1,904,475
3. Benefit Payments	(2,335,307)
4. Expenses	(100)
5. Expected Return at 7.0%	2,095,254
6. Expected Actuarial Value of Assets as of December 31, 2016 = (1) + (2) + (3) + (4) + (5)	31,811,982
7. Market Value of Assets as of December 31, 2016	30,994,503
8. Adjustments on Market Value (See Schedule of Market Value Adjustments below)	113,062
9. Actuarial Value of Assets as of December 31, 2016 = (6) + (8), but not less than 80% x (7), nor more than 120% x (7)	31,925,044

**Schedule of Market Value Adjustments**

<u>Year</u>	Gain/(Loss) <u>Base</u>	Unrecognized Balance <u>1/1/2016</u>	12/31/2016 <u>Adjustment</u>	Unrecognized Balance <u>1/1/2017</u>
2012	698,378	139,674	139,674	\$0
2013	2,154,032	861,614	430,806	430,808
2014	(79,783)	(47,869)	(15,957)	(31,912)
2015	(2,182,040)	(1,745,632)	(436,408)	(1,309,224)
2016	<u>(25,266)</u>	<u>N/A</u>	<u>(5,053)</u>	<u>(20,213)</u>
Total	N/A	(\$792,213)	\$113,062	(\$930,541)

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**January 1, 2017 Actuarial Valuation**

**Actuarial Balance Sheet**

The key elements of the actuarial funding process are illustrated in the Actuarial Balance Sheet. The format of the balance sheet captures the essential purpose of an actuarial cost method - the determination of assets sufficient to provide for pension benefits.

The Actuarial Present Value of Current and Prospective Plan Benefits is the liability that must be balanced by Current and Prospective assets. The Present Value of Future Normal Cost Contributions represents the prospective assets from contributions that will be made for costs allocated to the future.

January 1, 2017

**Liabilities**

1. Actuarial Present Value of Future Benefits	
a. Active Members	\$21,900,045
b. Terminated Vested Members	1,582,875
c. Retired Members	20,750,714
d. Beneficiaries	1,281,734
e. Disabled Members	<u>3,465,772</u>
f. Total	48,981,140

**Assets**

1. Current Valuation Assets	
a. Actuarial Value of Assets	31,925,044
2. Prospective Valuation Assets	
a. Unfunded Actuarial Accrued Liability	9,182,462
b. Present Value of Future Normal Cost Contributions	<u>7,873,634</u>
3. Total	48,981,140

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Development of Recommended Contribution**

	<u>January 1, 2017</u>
1. Entry Age Accrued Liability	
a. Active Members	\$14,026,411
b. Terminated Vested Members	1,582,875
c. Retired Members	20,750,714
d. Beneficiaries	1,281,734
e. Disabled Members	<u>3,465,772</u>
f. Total	41,107,506
2. Actuarial Value of Assets	31,925,044
3. Funded Ratio: (2) / (1f)	77.7%
4. Entry Age Unfunded Accrued Liability: (1f) - (2)	9,182,462
5. Entry Age Normal Cost	738,987
6. Expected Employee Contributions:*	147,423
7. Assumed Expenses at Beginning of Year (\$25,000 at mid year)	24,168
8. Normal Cost Including Expenses: (5) - (6) + (7)	615,732
9. Covered Payroll	4,825,405
10. Amortization of Unfunded Actuarial Accrued Liability	1,154,991
11. Recommended Contribution at Beginning of Year: (8) + (10)	1,770,723
12. Recommended Contribution, with Interest to Expected Payment Date	1,787,046
13. Recommended Contribution as a Percentage of Payroll	37.0%

*\*Reflects first 3% of employee contributions*

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Determination of Amortization Charges for the Recommended Contribution**

<u>Date Incurred</u>	<u>Description</u>	<u>Initial Balance</u>	<u>Initial Amortization Period</u>	<u>Unamortized Base January 1, 2016</u>	<u>Contribution To Base</u>	<u>Unamortized Base January 1, 2017</u>	<u>Amortization Payment</u>
1/1/2013	Initial Unfunded Accrued Liability	12,814,062	20	9,278,110	1,207,987	8,719,590	1,130,427
1/1/2014	Experience Gain	(961,835)	20	(820,591)	(90,673)	(787,359)	(84,851)
1/1/2015	Experience Gain	(417,005)	20	(406,790)	(39,311)	(395,954)	(36,787)
1/1/2016	Experience Loss	457,069	20	457,069	43,089	445,975	40,322
1/1/2017	Assumption Changes	1,703,516	20	N/A	N/A	1,703,516	150,280
1/1/2017	Experience Gain	(503,306)	20	<u>N/A</u>	<u>N/A</u>	(503,306)	(44,400)
	Total	13,092,501		8,507,798	1,121,092	9,182,462	1,154,991

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Determination of (Gain)/Loss for Plan Year Ending December 31, 2016**

1. Unfunded Accrued Liability as of January 1, 2016	\$8,507,798
2. Employer Normal Cost as of January 1, 2016	513,691
3. Assumed Expenses as of January 1, 2016	24,168
4. Interest on (1), (2), and (3) at 7.00%	633,196
5. Employer Contributions for the Prior Plan Year	1,610,554
6. Interest on (5) at 7.00%	86,047
7. Change in Unfunded Accrued Liability due to Assumption Changes	1,703,516
8. Expected Unfunded Actuarial Accrued Liability as of December 31, 2016 = (1) + (2) + (3) + (4) - (5) - (6) + (7)	9,685,768
9. Entry Age Accrued Liability as of January 1, 2017	41,107,506
10. Actuarial Value of Assets as of January 1, 2017	31,925,044
11. Unfunded Actuarial Accrued Liability as of January 1, 2017	9,182,462
12. (Gain)/Loss for Plan Year Ending December 31, 2016	(503,306)

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Actuarial Assumptions and Methods**

**Interest (adopted 01/01/2013)**

7.0% per annum, compounded annually

**Salary Increases (adopted 01/01/2013)**

4.5% per annum, compounded annually

**Inflation (adopted 01/01/2013)**

2.5% per annum

**Mortality (adopted 01/01/2017)**

Healthy Lives: RP-2014 Healthy Annuitant Mortality Projected Generationally from 2006 using MP-2016 Projection Scale.

Disabled Lives: RP-2014 Disabled Mortality Projected Generationally from 2006 using MP-2016 Projection Scale.

**Withdrawal**

Rates vary by age. Rates at selected ages are:

<u>Age</u>	<u>Percent Withdrawing</u>
20	10.0%
25	8.0
30	5.5
35	3.4
40	1.4
45	0.2
50	0.0

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**The City of Ladue Firemen and  
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**January 1, 2017 Actuarial Valuation**

**Actuarial Assumptions and Methods**

**Retirement (adopted 01/01/2017)**

Rates vary by age as follows:

<u>Age</u>	<u>Percent Retiring</u>
55	50%
56-58	20
59	50
60	100

Terminated vested participants are assumed to retire at age 55.

**Disability**

1985 Pension Disability Table – Class 3. Disabilities are assumed to be 75% duty related.  
Rates at selected ages are:

<u>Age</u>	<u>Percent Becoming Disabled</u>
20	0.14%
25	0.20
30	0.30
35	0.42
40	0.59
45	0.82
50	1.22
55	2.09
60	3.10

**Administrative Expenses**

\$25,000 per year

**Marriage**

80% of members are assumed to be married at the time of withdrawal, retirement, death or disability. Males are assumed to be 4 years older than their spouses.

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**The City of Ladue Firemen and  
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**January 1, 2017 Actuarial Valuation**

**Actuarial Assumptions and Methods**

**Children of Active Employees**

Active members are assumed to have one child. Each child is assumed to be born at a member's age 28.

**Form of Payment**

All members are assumed to elect the Life Annuity with a 50% postretirement death benefit payable to a spouse and eligible children, with the exception that those who terminate prior to retirement are assumed to elect a return of contributions.

**Actuarial Cost Method (adopted 01/01/2013)**

The Entry Age Normal Cost Method on a closed group basis was used. Normal costs are computed as a level percent of pay. The Entry Age Normal Unfunded Accrued Liability (UAL) is amortized on a level dollar basis over a closed 20 year period with future changes in UAL resulting in separate 20-year amortization bases.

**Asset Valuation Method**

An asset valuation method is used to help smooth short term fluctuations in market value. The actuarial value of assets is equal to the prior year's actuarial value of assets adjusted as follows:

1. increased with actual contributions for the year;
2. reduced by actual benefit payments and expenses for the year;
3. increased by expected investment income calculated using the assumed rate of return
4. increased by phased in investment gains/(losses)
5. limited to no less than 80% of market value and no more than 120% of market value

Each year, the amount of investment gain/(loss) to be phased in is equal to the excess of the plan's market value over the sum of the expected asset value and the unrecognized balances of investment gains/(losses) for the previous five years. 20% of this amount plus 20% of the similar amounts calculated in each of the four preceding years are summed and recognized as the amount of phased-in gains recognized in the current year

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**The City of Ladue Firemen and  
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**January 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions**

A summary of the current primary provisions of the Plan is presented below. A complete description of the provisions can be found in Ordinance 1932, as amended by Ordinances 2032 and 2056.

**Effective Date**

Originally effective May 1, 1947; most recently restated effective November 19, 2007 and most recently amended December 17, 2012.

**Eligibility**

Any salaried uniformed employee of the Fire Department or Police Department of the City of Ladue becomes eligible after his first hour of employment.

**Employee Contributions**

Each Employee shall contribute 6.0% of salary to the Pension Fund in 2014 and thereafter. Contributions accumulate at an interest rate of 4% as established by the Board of Trustees.

**Salary**

Calendar year compensation paid to an employee by the City of Ladue, including LTD premiums, temporary disability payments, and employee contributions to an eligible deferred compensation plan, cafeteria plan, or transportation expense program.

**Final Average Salary (FAS)**

Average monthly salary during the last 60 months of employment, or average monthly salary during an employee's entire employment if employed less than 60 months. The FAS for a disabled participant is determined as of the Date of Disability.

**Career Average Salary (CAS)**

Average monthly salary during an employee's entire employment. The CAS for a disabled participant is determined as of the Date of Disability.

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions**

**Years of Service**

Sum of continuous periods of service from date of hire to date of termination, including periods on LTD, Family and Medical Leave, and absences without pay lasting less than 31 consecutive days. Does not include partial years of service.

**Normal Retirement**

Eligibility: Age 55 with 10 Years of Service.

Benefit: Employees hired prior to January 1, 2013:

Less than 20 Years of Service: 2% of CAS multiplied by Years of Service.

At least 20 Years of Service: 40% of FAS + 2.5% of FAS multiplied by Years of Service in excess of 20 up to a maximum of 10.

Employees hired on or after January 1, 2013:

Less than 30 Years of Service: 2% of CAS multiplied by Years of Service.

At least 30 Years of Service: 60% of FAS.

**Disability Benefit**

Eligibility: 10 Years of Service including period of Disability.

Benefit: Disability Benefits are paid outside the Plan by the City's Long-Term Disability Plan for disabilities that occur after January 1, 2008. Upon attaining Early or Normal Retirement eligibility, a disabled member is entitled to the Early or Normal Retirement Benefit based on FAS at Date of Disability and Credited Service including the period while on LTD.

**Early Retirement**

Eligibility: Age 50 with 10 Years of Service.

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions**

Benefit: Accrued Benefit based on FAS or CAS and Years of Service at retirement actuarially reduced for early commencement.

**Vested Termination Benefit**

Less than 10 Years of Service: Refund of contributions with interest.

At least 10 Years of Service: Either refund of contributions with interest or the participant's Accrued Benefit based on FAS or CAS and Credited Service at termination actuarially adjusted for date of retirement.

**Deferred Retirement**

A member may defer his pension after age 55 upon discretion of the City Council.

**Death Benefit**

Active Duty: 50% of FAS plus 10% of FAS for each Dependent Child to a maximum of three.

Active Non-Duty: 5% of FAS multiplied by Years of Service up to a maximum of 24% of FAS plus 2% of FAS multiplied by Years of Service up to a maximum of 10% of FAS for each Dependent Child to a maximum of three.

Duty Disability (Disabled prior to January 1, 2008): 40% of FAS plus 10% of FAS for each Dependent Child to a maximum of three.

Non-Duty Disability (Disabled prior to January 1, 2008): Two thirds of the benefit the disabled retiree was receiving plus one third of the benefit the disabled retiree was receiving for each Dependent Child to a maximum of three.

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions**

**Cost-of-Living Adjustment (COLA)**

Benefits commencing on or after April 17, 1972 are adjusted each January 1 for an annual COLA based on the Consumer Price Index on September 30 prior to the adjustment date. COLAs are limited to a maximum annual increase of 2% and a lifetime maximum of 20%. If the CPI is less than 1% during a year, there shall be no adjustment, and if the CPI is negative, there shall be no adjustment unless the decrease is 2% or more. Retirees and disabled members (who became disabled prior to January 1, 2008) first become eligible for the COLA on the second January 1<sup>st</sup> following retirement.

**Normal Form of Payment**

Life Annuity with a 50% post retirement death benefit payable to a spouse (who has attained age 50) and eligible children (single and below age 18).

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Summary of Member Data**

	<u>January 1, 2016</u>	<u>January 1, 2017</u>
1. Active Members		
a. Count	57	58
b. Plan Compensation	4,715,297	4,912,972
c. Average Compensation	82,725	84,706
d. Average Age	40.6	41.0
e. Average Service	11.5	11.7
2. Retired Members (Including Beneficiaries and Disableds)		
a. Count*	62	64
b. Total Monthly Benefits	\$195,037	\$197,248
c. Average Monthly Benefits	\$3,146	\$3,082
3. Terminated Vested Members		
a. Count	5	4
b. Total Monthly Benefits	\$13,357	\$12,290
c. Average Monthly Benefits	\$2,671	\$3,073
4. Terminated Nonvested Due Refund of Contributions		
a. Count	0	0
b. Employee Contributions	\$0	\$0

*\*Includes 2 Children and 2 Alternate Payees*

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Distribution of Active Members by Age and by Years of Service**  
(as of January 1, 2017)

Attained Age	YEARS OF CREDITED SERVICE										Total	
	Under 1 No.	1 to 4 No.	5 to 9 No.	10 to 14 No.	15 to 19 No.	20 to 24 No.	25 to 29 No.	30 to 34 No.	35 to 39 No.	40 and up No.		
Under 25	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	1	2	1	0	0	0	0	0	0	0	0	4
30 to 34	1	7	4	1	0	0	0	0	0	0	0	13
35 to 39	0	2	1	6	1	0	0	0	0	0	0	10
40 to 44	0	1	7	5	1	0	0	0	0	0	0	14
45 to 49	0	1	1	1	0	5	0	0	0	0	0	8
50 to 54	0	0	0	0	1	1	2	0	0	0	0	4
55 to 59	0	0	0	0	0	0	3	1	0	0	0	4
60 to 64	0	0	0	0	0	1	0	0	0	0	0	1
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0
70 and up	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	13	14	13	3	7	5	1	0	0	0	58

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**January 1, 2017 Actuarial Valuation**

**Summary of Changes in Member Data**

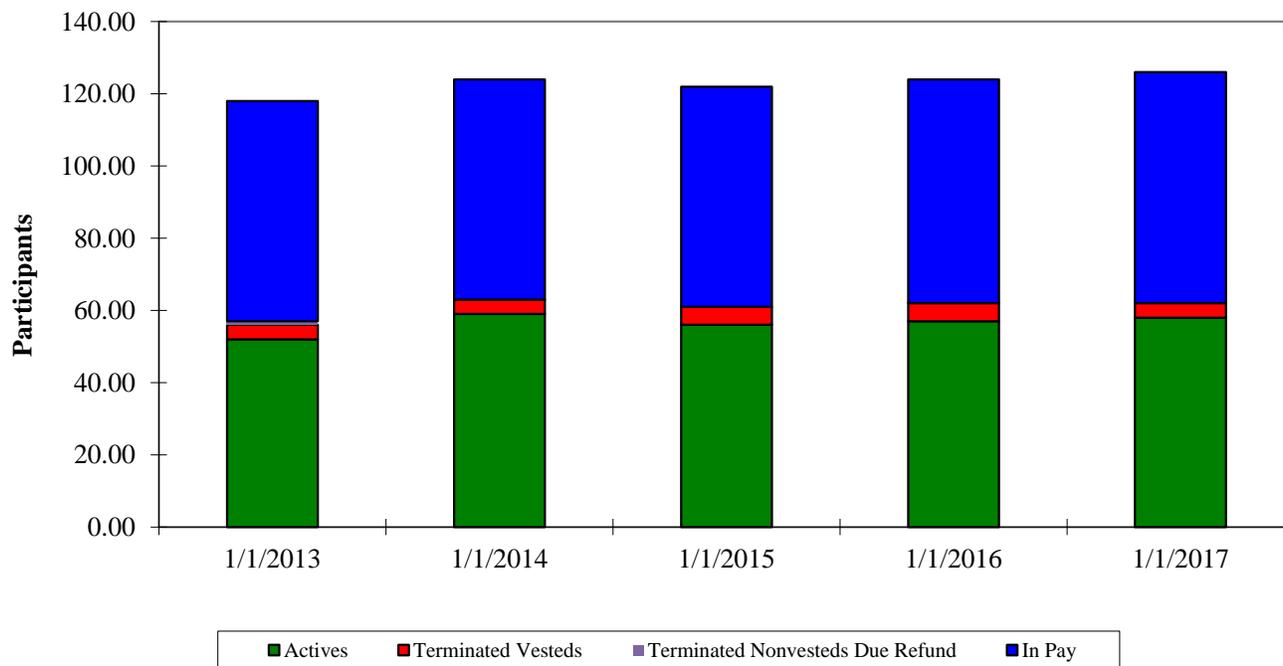
	<u>Active Members</u>	<u>Members in Pay Status</u>	<u>Terminated Nonvested Due Refund</u>	<u>Terminated Vested Members</u>	<u>Total</u>
Count as of January 1, 2016	57	62 *	0	5	124
New Entrants	2	0	0	0	2
Rehired	0	0	0	0	0
Retired	(1)	2	0	(1)	0
Became Disabled	0	0	0	0	0
Lump Sum Payouts	0	0	0	0	0
Died with Beneficiary	0	0	0	0	0
New Beneficiaries	0	0	0	0	0
Died without Beneficiary	0	(3)	0	0	(3)
Terminated Nonvested Refunded	0	3	0	0	3
Terminated Nonvested Due Refund	0	0	0	0	0
Terminated with Vesting	0	0	0	0	0
Data Corrections	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Changes	<u>1</u>	<u>2</u>	<u>0</u>	<u>(1)</u>	<u>2</u>
Count as of January 1, 2017	58	64 *	0	4	126

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## The City of Ladue Firemen and Policemen's Pension Plan

### Member Data

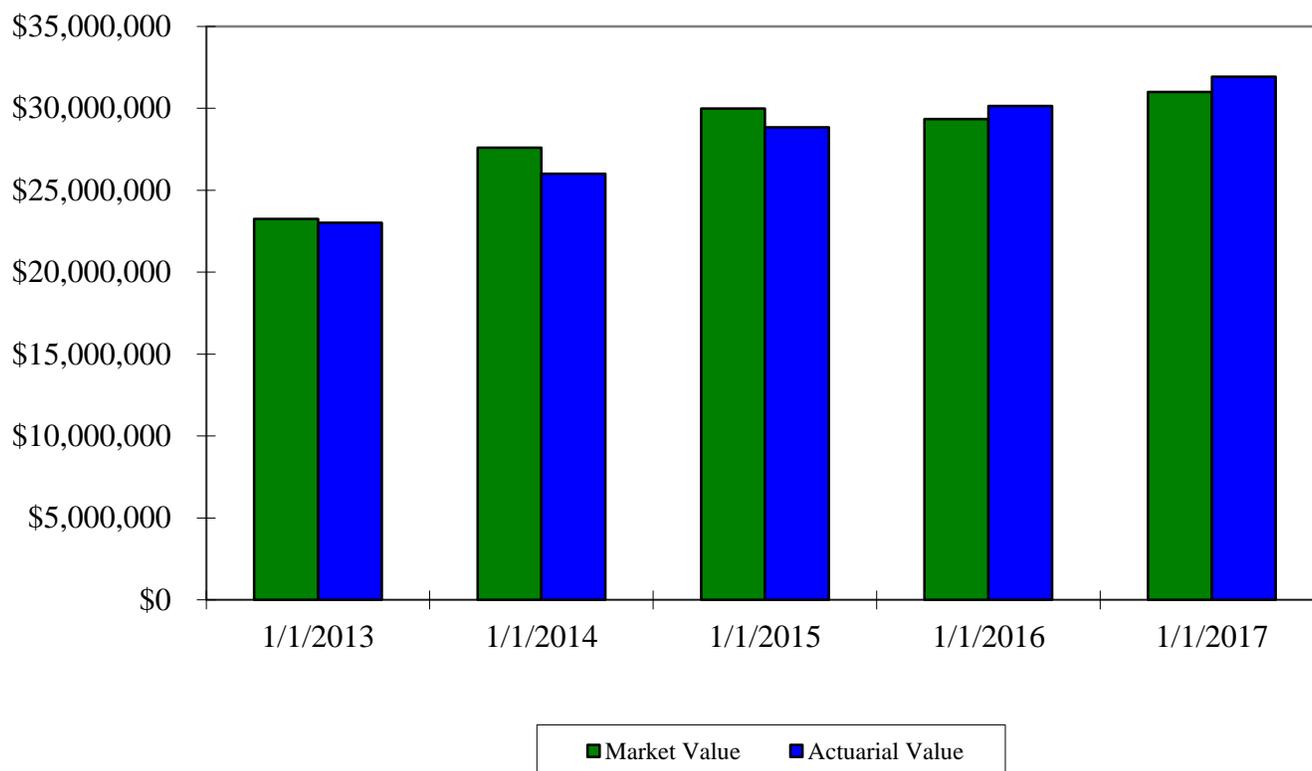


<b>Valuation Date</b>	<b>1/1/2013</b>	<b>1/1/2014</b>	<b>1/1/2015</b>	<b>1/1/2016</b>	<b>1/1/2017</b>
Actives	52	59	56	57	58
Terminated Vested	4	4	5	5	4
Terminated Nonvested Due Refund	1	0	0	0	0
In Pay	61	61	61	62	64
<b>Total</b>	<b>118</b>	<b>124</b>	<b>122</b>	<b>124</b>	<b>126</b>

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## The City of Ladue Firemen and Policemen's Pension Plan

### Total Assets

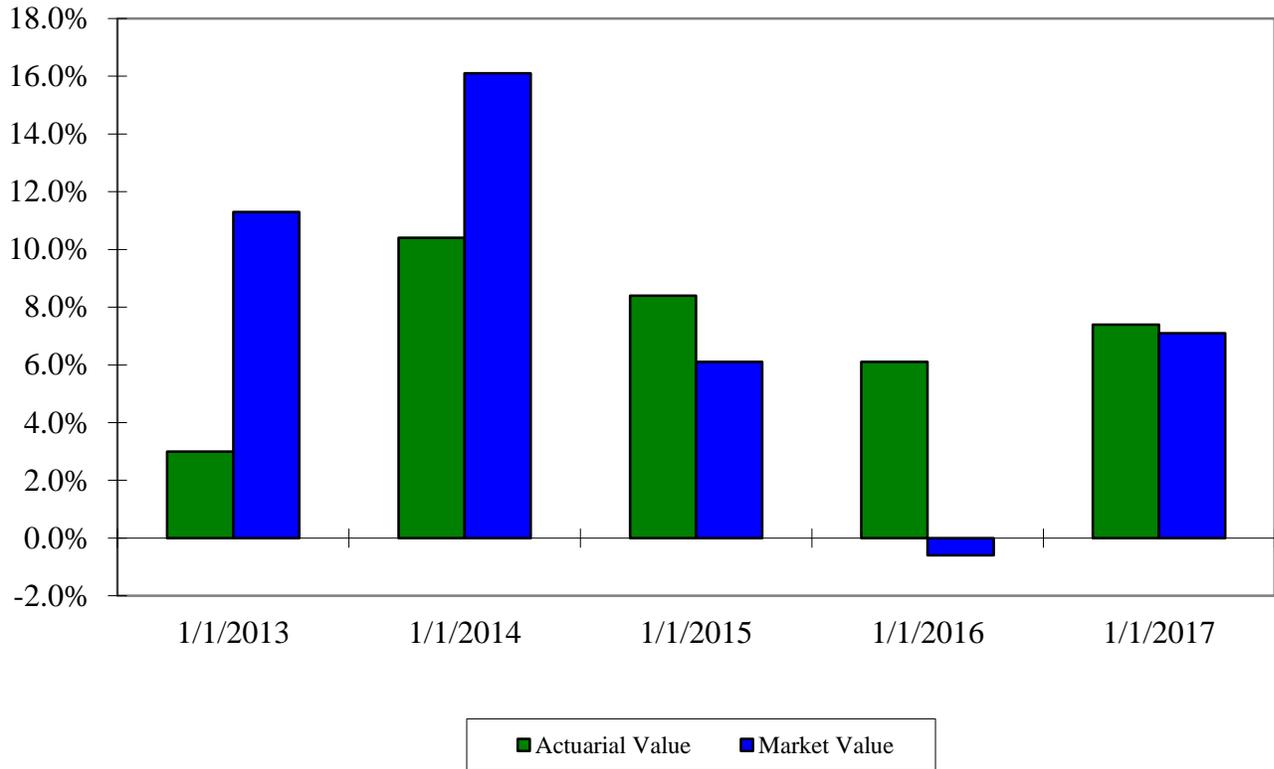


<b>Valuation Date</b>	<b>Market Value</b>	<b>Actuarial Value</b>
1/1/2013	\$23,241,352	\$23,012,239
1/1/2014	\$27,602,346	\$26,010,558
1/1/2015	\$29,983,189	\$28,845,871
1/1/2016	\$29,355,447	\$30,147,660
1/1/2017	\$30,994,503	\$31,925,044

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## The City of Ladue Firemen and Policemen's Pension Plan

### Rate of Return (%) on Total Assets

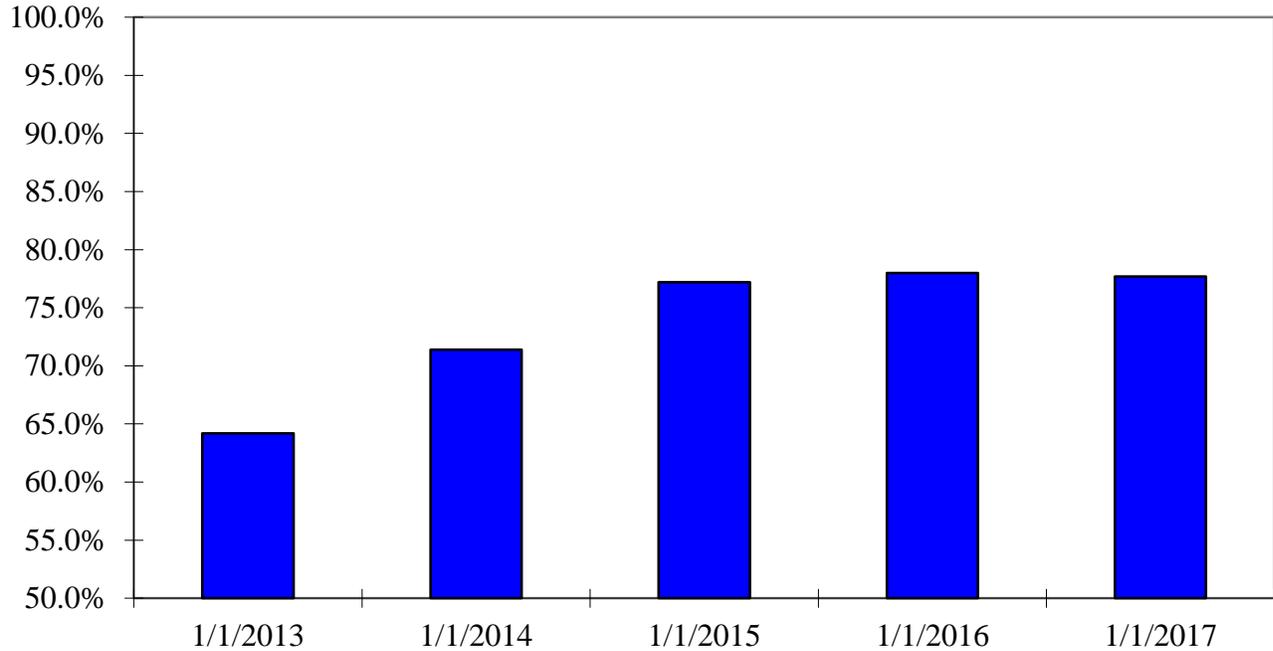


<b>Valuation Date</b>	<b>Actuarial Value</b>	<b>Market Value</b>
1/1/2013	3.0%	11.3%
1/1/2014	10.4%	16.1%
1/1/2015	8.4%	6.1%
1/1/2016	6.1%	-0.6%
1/1/2017	7.4%	7.1%

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**Funded Ratio: Actuarial Value of Assets (AVA)  
vs. Actuarial Accrued Liability (AAL)**

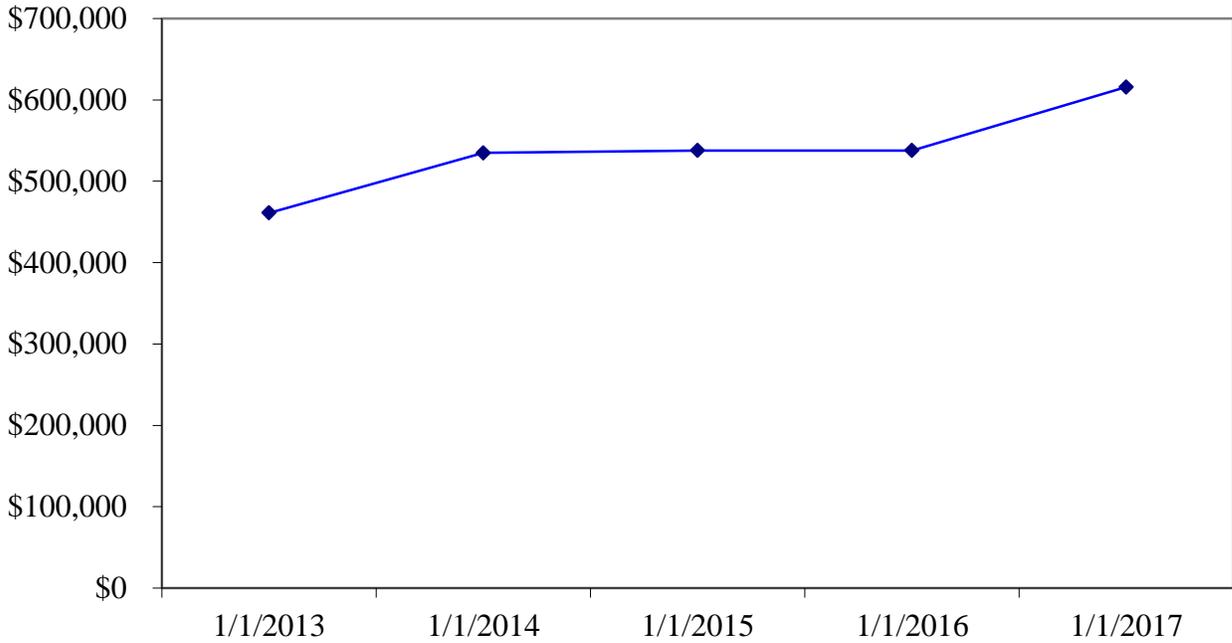


<b>Valuation Date</b>	<b>AVA/AAL</b>
1/1/2013	64.2%
1/1/2014	71.4%
1/1/2015	77.2%
1/1/2016	78.0%
1/1/2017	77.7%

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**The City of Ladue Firemen and  
Policemen's Pension Plan**

**Employer Normal Cost**



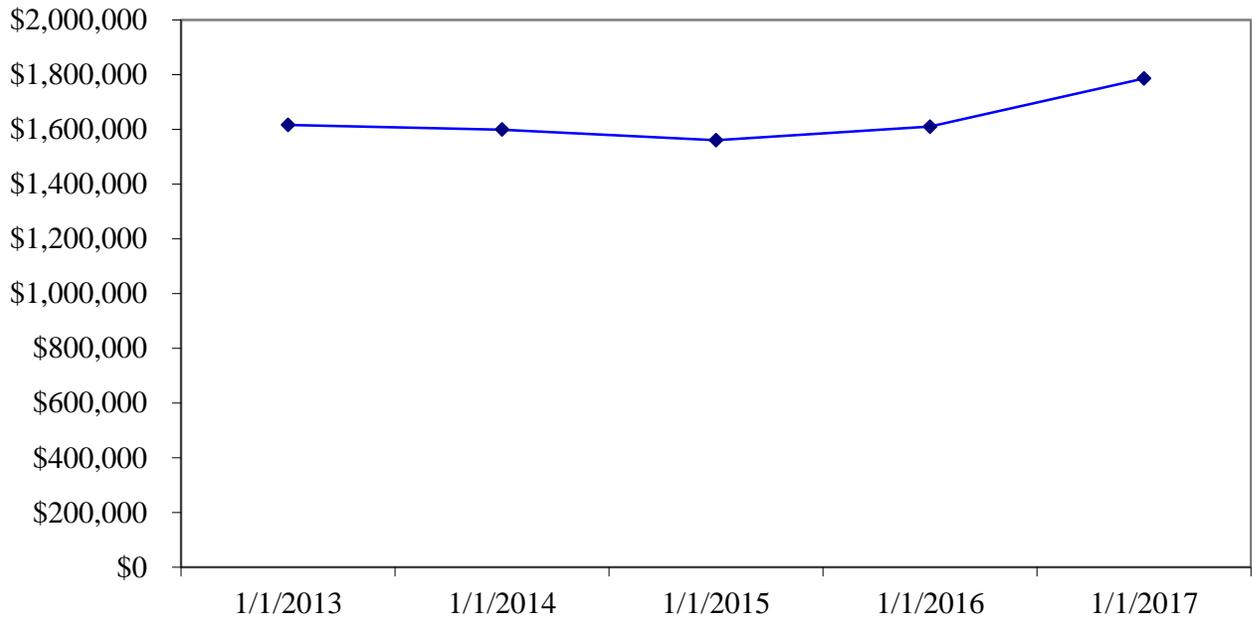
<b>Valuation Date</b>	<b>Normal Cost</b>
1/1/2013	\$461,147
1/1/2014	\$534,890
1/1/2015	\$537,801
1/1/2016	\$537,859
1/1/2017	\$615,732

Includes \$25,000 load for expenses

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## The City of Ladue Firemen and Policemen's Pension Plan

### Recommended Contribution



<b>Valuation Date</b>	<b>Recommended Contribution</b>
1/1/2013	\$1,616,761
1/1/2014	\$1,599,667
1/1/2015	\$1,560,988
1/1/2016	\$1,610,554
1/1/2017	\$1,787,046

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