

July 18, 2017

VIA EMAILBoard of Trustees
St. Louis County Retirement Plans
Administration Annex, 5th Floor
41 S. Central Avenue
Clayton, Missouri 63105

Board Members:

Conduent HR Services (Conduent) projected the impact of the proposed changes to new hire benefits in the St. Louis County retirement program. The purpose of this letter is to communicate the anticipated impact of those changes in keeping with Missouri Statute 105.665.

Design Summary

The table below summarizes the key provisions of the current program as well as the proposed changes that would impact new employees. These changes that apply to new employees are assumed to take effect for employees hired on and after July 1, 2017.

	Current Program	Proposed Changes for New Hires
Benefit percentage – Civilian	1.5%	1.3%
Benefit percentage - Police	1.6%	1.4%
Service for full vesting	5 years	7 years
Unreduced early retirement	Rule of 80	Rule of 85
Employee contributions	0% of salary	4% of salary

Projection Results

The summary of projection results is presented in Appendix A. With only new employees hired after July 1, 2017 being affected by the proposed design changes, the liability will not be affected until the January 1, 2018 plan year, when savings start to be generated. The total contributions are reduced by \$120.0 million for a 20 year period and \$299.3 million for a 30 year period. The annual savings amount increases each year as the number of new employees hired after the design changes increases to replace retiring and terminating employees. The savings amounts would continue to grow annually. The funded percentage of the plans remains at roughly the same level due primarily to the long period to amortize of the unfunded liability. A modification in funding policy may be required in order to significantly improve the future funded status.

Information for Missouri Statute

The following information is required to be disclosed as part of State Statute 105.665. We have provided in the same order as the Statute. We have also included the 2016 valuation report for the plans as an attachment to this letter; we will reference this report, as needed.

1. The normal cost is provided in Schedule B of the valuation report. Additional details are provided in Appendix B.
2. The amortization payment is provided in Schedule B of the valuation report. Additional details are provided in Appendix B.

3. The total contribution is provided in Schedule B of the valuation report. Additional details are provided in Appendix B.
4. The County is currently paying the total contribution rate referenced in item 3 above.
5. The asset, liability, and funded ratio information is provided in Schedule B of the valuation report.
6. The total contribution rate after reflecting the proposed changes is provided in Appendix A.
7. The results of the projection are provided in Appendix A.
8. Only employee contributions are mandated as a result of the proposed changes.
9. Conduent has no reason to believe that the proposed changes would impair the ability of the plans to meet their obligations.
10. All assumptions used in this study are the same demographic and economic assumptions provided in Schedule J of the valuation report. The actual rate of return on Plan assets during 2016 was estimated to be 5.10% based on preliminary balances provided by Summit Strategies. The active Civilian and Police population sizes were assumed to remain constant over the projection period, and representative new employees were added to replace those who are assumed to terminate, die, or retire each year according to the actuarial assumptions. The County is assumed to make all recommended future contributions based on the County's funding policy.
11. An actuarial certification on the assumptions used is provided below.
12. The actuarial funding method is provided in Schedule J of the valuation report.

Purpose of This Report

This report is prepared for Retirement Board for the St. Louis County Retirement Plans for its use in its review of the operation of these Plans. It is expected that the Board will use the results in this report to assist in the decision-making process regarding plan design. The use of this report by other parties and/or for other purposes is not recommended without advance review of the appropriateness of such application by Conduent.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions, applicable law or regulations. Because of limited scope, Conduent performed no analysis of the potential range of such future differences.

Where presented, references to items such "funded ratio" and "unfunded accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Actuarial Certification

In my opinion, the actuarial assumptions and methods used to value the plan, as selected by the Board in consultation with the actuary, are reasonable in the aggregate, and in combination represent a reasonable estimate of anticipated experience under the plans.

The report was prepared under the supervision of Timothy Bowen, a Fellow of the Conference of Consulting Actuaries and a member of the American Academy of Actuaries, who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Timothy G. Bowen FCA, EA, MAAA
Principal, Wealth Consulting
Conduent Human Resource Services

Appendix A

St. Louis County Retirement Plans Projection of Proposed Plan Design Combined Civilian and Police Plans (\$ millions)

Baseline - No Change to Current Program

Year	Total Liability	Actuarial Value of Assets	Calendar Contributions	Funded Percent
2017	\$ 906.6	\$ 644.4	\$ 40.7	71.1%
2018	936.7	658.2	42.4	70.3%
2019	966.9	677.1	43.5	70.0%
2020	996.4	705.8	43.8	70.8%
2021	1,025.3	736.8	43.7	71.9%
2022	1,053.3	766.8	43.8	72.8%
2023	1,080.4	796.0	43.8	73.7%
2024	1,106.4	824.1	43.9	74.5%
2025	1,131.5	851.3	44.1	75.2%
2026	1,156.1	877.9	44.3	75.9%
2027	1,180.1	903.9	44.7	76.6%
2028	1,203.7	929.4	45.1	77.2%
2029	1,227.4	955.0	45.6	77.8%
2030	1,251.1	980.6	46.2	78.4%
2031	1,275.3	1,006.6	46.8	78.9%
2032	1,299.6	1,032.6	47.5	79.5%
2033	1,324.7	1,059.2	48.1	80.0%
2034	1,350.4	1,086.4	48.6	80.5%
2035	1,376.1	1,113.6	49.2	80.9%
2036	1,402.5	1,141.3	49.9	81.4%
2037	1,429.8	1,170.0	50.8	81.8%
2038	1,458.3	1,199.8	51.6	82.3%
2039	1,488.1	1,230.9	52.5	82.7%
2040	1,519.5	1,263.5	53.5	83.2%
2041	1,552.6	1,297.7	54.7	83.6%
2042	1,588.5	1,334.6	55.9	84.0%
2043	1,627.2	1,374.1	57.2	84.4%
2044	1,668.9	1,416.5	58.5	84.9%
2045	1,713.4	1,461.8	59.9	85.3%
2046	1,760.4	1,509.3	61.4	85.7%
2047	1,810.6	1,560.0	62.9	86.2%

Proposed Changes to Benefit Program

Year	Total Liability	Actuarial Value of Assets	Calendar Contributions	Funded Percent	Annual Savings	Cumulative Savings	Cumulative Savings per Active Payroll
2017	\$ 906.6	\$ 644.4	\$ 40.7	71.1%	\$ -	\$ -	0.00%
2018	936.8	658.5	41.8	70.3%	0.6	0.6	0.27%
2019	966.9	677.1	42.5	70.0%	1.0	1.6	0.68%
2020	996.3	705.5	42.3	70.8%	1.5	3.1	1.24%
2021	1,024.8	736.2	41.8	71.8%	1.9	5.0	1.89%
2022	1,052.2	765.7	41.4	72.8%	2.4	7.4	2.65%
2023	1,078.4	794.1	40.9	73.6%	2.9	10.3	3.49%
2024	1,103.4	821.1	40.4	74.4%	3.5	13.8	4.43%
2025	1,127.3	847.1	40.1	75.1%	4.0	17.8	5.41%
2026	1,150.4	872.2	39.7	75.8%	4.6	22.4	6.46%
2027	1,172.5	896.4	39.4	76.5%	5.3	27.7	7.55%
2028	1,194.0	919.8	39.2	77.0%	5.9	33.6	8.69%
2029	1,215.1	943.0	39.0	77.6%	6.6	40.2	9.87%
2030	1,236.0	965.7	38.9	78.1%	7.3	47.5	11.07%
2031	1,256.8	988.4	38.7	78.6%	8.1	55.6	12.32%
2032	1,277.3	1,010.7	38.7	79.1%	8.8	64.4	13.55%
2033	1,298.0	1,033.1	38.6	79.6%	9.5	73.9	14.81%
2034	1,318.9	1,055.5	38.2	80.0%	10.4	84.3	16.24%
2035	1,339.2	1,077.4	38.1	80.5%	11.1	95.4	17.49%
2036	1,359.7	1,099.5	38.0	80.9%	11.9	107.3	18.78%
2037	1,380.5	1,121.9	38.1	81.3%	12.7	120.0	20.04%
2038	1,402.1	1,144.9	38.0	81.7%	13.6	133.6	21.30%
2039	1,424.2	1,168.5	38.1	82.0%	14.4	148.0	22.53%
2040	1,447.2	1,192.9	38.1	82.4%	15.4	163.4	23.76%
2041	1,471.2	1,218.3	38.3	82.8%	16.4	179.8	24.94%
2042	1,497.1	1,245.5	38.5	83.2%	17.4	197.2	26.13%
2043	1,525.0	1,274.5	38.8	83.6%	18.4	215.6	27.28%
2044	1,555.2	1,305.8	39.1	84.0%	19.4	235.0	28.40%
2045	1,587.8	1,339.3	39.5	84.3%	20.4	255.4	29.51%
2046	1,622.3	1,374.5	40.0	84.7%	21.4	276.8	30.52%
2047	1,659.5	1,412.4	40.4	85.1%	22.5	299.3	31.60%

NOTES

- “Calendar Contributions” are defined as St. Louis County annual contributions.
- “Savings” is defined as St. Louis County contribution savings as a result of the proposed changes in benefit design. The savings are a combination of employee contributions and a reduction in benefit levels for new hires.
- 2037 total contributions are \$48.1 million, with \$38.1 million from the County and \$10.0 million from employee contributions from the new hires. The additional \$2.7 million in annual savings results from slightly lower benefit levels for new hires.
- 2047 total contributions are \$57.7 million, with \$40.4 million from the County and \$17.3 million from employee contributions from the new hires. The additional \$5.2 million in annual savings results from slightly lower benefit levels for new hires.
- Under the current program, the employer normal cost is approximately 9%-10% of pay. The employer normal cost under the proposed design for new hires is approximately 5%-6% of pay. The large decline in normal cost percentage is largely a result of employee contributions, with new hires covering about 40% of the cost of their benefits.

Appendix B

St. Louis County Retirement Plans Contribution Schedule for 2016

	<u>Plan A</u>
Normal Cost	\$ 13,325,941
As % of Covered Payroll	9.33%
Amortization Payment	\$ 14,248,299
As % of Covered Payroll	9.98%
Total Annual Cost	\$ 27,574,240
As % of Covered Payroll	19.31%
	<u>Plan B</u>
Normal Cost	\$ 4,789,894
As % of Covered Payroll	9.22%
Amortization Payment	\$ 7,574,824
As % of Covered Payroll	14.58%
Total Annual Cost	\$ 12,364,718
As % of Covered Payroll	23.80%

St. Louis County Retirement Plans

Actuarial Valuation Report

Plan Year

January 1, 2016 – December 31, 2016

June 2016





Stephen Siepman
*Principal, Retirement
Consulting Actuary*

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June 2016

Board of Trustees
St. Louis County Retirement Plans
Administration Annex, 5th Floor
41 S. Central Avenue
Clayton, Missouri 63105

Board Members:

Buck Consultants, LLC has been retained to complete the actuarial valuation of the St. Louis County Retirement Plans for the plan year beginning January 1, 2016. The results of the valuation presented in this report are to be used in determining the contribution for the 2016 plan year.

The computations herein were performed as of January 1, 2016. They were determined using employee data and audited financial data provided by St. Louis County. These data were not audited by Buck, although they were reviewed for reasonableness and consistency with the prior year's information.

Except as noted below, for 2016, all actuarial assumptions and methods used in this report are the same as those used in the previous valuation. These changes have been made in the basic actuarial valuation for the January 1, 2016 valuation:

1. The valuation interest rate assumption was changed from 8.0% to 7.75% per year.
2. The basic salary increase was changed from 4.50% to 4.25% per year.
3. The period of amortization was changed from 30 to 25 years with respect to any unfunded accrued liability.

The impact of these changes on the liabilities, projected funding costs, and the present value of current benefits are shown in the pertinent schedules in the report.

In selecting economic assumptions, the interest rate of 7.75% is based upon a review of the existing portfolio structure, a review of recent experience, and information considered by the Board. The salary increase assumption is based on actual experience and future expectations of inflation, merit, and productivity components in light of current economic conditions and budget considerations. In addition, the Board has elected to adopt a funding policy that will accelerate the funding of any unfunded accrued liability. All other actuarial assumptions and methods have been adopted based on anticipated experience and our annual review of the emerging experience.

Please see Schedule J for more detail on the actuarial assumptions and methods.

Comments on the Valuation Results

Costs for Plan A increased from \$26,348,881 for 2015 to \$27,574,240 for 2016. The increase is from 19.05% to 19.31% as a percentage of covered payroll. For Plan B, costs increased from \$11,545,422 for 2015 to \$12,364,718 for 2016. This represents an increase in cost measured as a percentage of covered payroll, from 22.67% to 23.80%. The 2016 costs are based on the County's contribution policy, which is to contribute the normal cost plus twenty-five year amortization of unfunded accrued liability (or ten year amortization if the assets exceed the accrued liability).

The rate of return on the actuarial value of assets was 9.5%, greater than the assumed return of 8% for the 2015 plan year. The trust fund experienced a 1.8% rate of return on market value. A detailed analysis of the change in costs may be found in Schedule F.

The funded ratio at January 1, 2016 obtained by comparing the actuarial value of assets to the accrued liability is 74% for Plan A and 60% for Plan B.

Where presented, references to "funded ratio" and "unfunded accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Funding Level – Valuation of Current Accrued Benefits

Based on a 7.75% discount rate, the market value of plan assets is less than the value of current accrued benefits (see Schedule G). From January 1, 2015 to January 1, 2016, the funded ratio of Plan A decreased from 81% to 76%. The funded ratio of Plan B decreased 68% to 63% during that period. The factors leading to the decrease in these funded ratios are the passage of time as well as a combination of the relatively unfavorable investment results on a market value basis in combination with the increase in the magnitude of the liabilities as a result of additional benefit accruals and the adoption of a lower valuation interest rate.

GASB

Disclosure information in accordance with GASB Statements 67 and 68 will be presented in a separate communication, as needed.

Purpose of This Report

This report is prepared for St. Louis County for its use in its review of the operation of these Plans. It is expected that the County will use the results in this report for the purpose of determining contributions and the funding status of plan benefits. The report will also be used in the preparation of any required reports, including the audited financial report prepared by the plan accountant. The use of this report by other parties and/or for other purposes is not recommended without advance review of the appropriateness of such application by Buck.

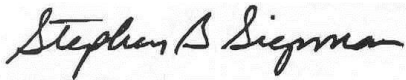
Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions, applicable law or regulations. Because of limited scope, Buck performed no analysis of the potential range of such future differences.

Actuarial Status

In my opinion, the actuarial assumptions and methods used to value the plan, as selected by the Board in consultation with the actuary, are reasonable, and in combination represent a reasonable estimate of anticipated experience under the plans.

The costs and actuarial exhibits presented in this report were determined in accordance with generally accepted actuarial procedures and appropriately disclose the actuarial position of the plans. The report was prepared under the supervision of Stephen Siepman, a Fellow of the Society of Actuaries and a member of the American Academy of Actuaries, who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

BUCK CONSULTANTS, LLC

A handwritten signature in black ink that reads "Stephen B. Siepman". The signature is written in a cursive style.

Stephen B. Siepman, F.S.A., M.A.A.A.
Principal, Retirement Consulting Actuary

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St. Louis County Retirement Plans
Schedule A: Contribution Schedule for 2016

	<u>Plan A</u>
Normal Cost	\$ 13,325,941
As % of Covered Payroll	9.33%
Amortization Payment	\$ 14,248,299
As % of Covered Payroll	9.98%
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Normal Cost	\$ 4,789,894
As % of Covered Payroll	9.22%
Amortization Payment	\$ 7,574,824
As % of Covered Payroll	14.58%
Total Annual Cost	\$ 12,364,718
As % of Covered Payroll	23.80%

St. Louis County Retirement Plans
Schedule B: Summary of Valuation Results

Plan A – Civilian

	1/1/2015	1/1/2016
A. Snapshot Figures		
1. Number of Participants Included in Valuation		
Active	3,068	3,060
Vested Terminated	1,161	1,188
Retired and Beneficiaries	<u>2,209</u>	<u>2,324</u>
TOTAL	6,438	6,572
2. Covered Payroll	\$ 138,298,787	\$ 142,780,407
3. PV of Accrued Benefits	\$ 575,808,509	\$ 611,972,469
4. Plan Assets - Market	\$ 467,160,361	\$ 464,255,042
B. On-Going Figures		
1. Accrued Liability		
Active	\$ 265,636,691	\$ 269,041,179
Vested Terminated	31,142,263	33,969,356
Retired and Beneficiaries	<u>317,653,688</u>	<u>346,254,375</u>
TOTAL	\$ 614,432,642	\$ 649,264,910
1a. Present Value of Future Benefits	\$ 724,254,742	\$ 763,212,365
2. Plan Assets - Actuarial Value	\$ 450,764,297	\$ 481,818,735
3. Plan Assets - Yield		
Market Value	5.5%	1.8%
Actuarial Value	9.5%	9.5%
4. Unfunded Accrued Liability (Line 1 - Line 2)	\$ 163,668,345	\$ 167,446,175
5. Normal Cost	\$ 12,887,549	\$ 13,325,941
6. 30-Year Amortization Payment	\$ 13,461,332	\$ 14,248,299
7. Total Annual Cost	\$ 26,348,881	\$ 27,574,240
8. Cost as % of Covered Payroll	19.05%	19.31%
9. Funded Ratio (Line 2 / Line 1)	73.4%	74.2%

St. Louis County Retirement Plans

Schedule B: Summary of Valuation Results (continued)

Plan B – Police

	1/1/2015	1/1/2016
A. Snapshot Figures		
1. Number of Participants Included in Valuation		
Active	827	833
Vested Terminated	215	236
Retired and Beneficiaries	<u>461</u>	<u>473</u>
TOTAL	1,503	1,542
2. Covered Payroll	\$ 50,938,684	\$ 51,954,979
3. PV of Accrued Benefits	\$ 193,008,920	\$ 206,292,997
4. Plan Assets - Market	\$ 131,517,550	\$ 130,652,795
B. On-Going Figures		
1. Accrued Liability		
Active	\$ 79,852,183	\$ 84,912,122
Vested Terminated	5,456,550	6,461,054
Retired and Beneficiaries	<u>126,343,060</u>	<u>133,209,611</u>
TOTAL	\$ 211,651,793	\$ 224,582,787
1a. Present Value of Future Benefits	\$ 264,489,949	\$ 279,341,873
2. Plan Assets - Actuarial Value	\$ 126,796,865	\$ 135,563,362
3. Plan Assets - Yield		
Market Value	5.5%	1.8%
Actuarial Value	9.5%	9.5%
4. Unfunded Accrued Liability (Line 1 - Line 2)	\$ 84,854,928	\$ 89,019,425
5. Normal Cost	\$ 4,566,306	\$ 4,789,894
6. 30-Year Amortization Payment	\$ 6,979,116	\$ 7,574,824
7. Total Annual Cost	\$ 11,545,422	\$ 12,364,718
8. Cost as % of Covered Payroll	22.67%	23.80%
9. Funded Ratio (Line 2 / Line 1)	59.9%	60.4%

St. Louis County Retirement Plans

Schedule C: Benefit Liabilities

Plan A - Civilian

	1/1/2015	1/1/2016
Active Employees		
Retirement Benefits	\$ 366,316,442	\$ 373,632,371
Pre-Retirement Death Benefits	6,558,838	6,645,079
Post-Retirement Death Benefits	<u>2,583,511</u>	<u>2,711,183</u>
TOTAL	\$ 375,458,791	\$ 382,988,633
Vested Terminated Participants		
Retirement Benefits	\$ 30,182,999	\$ 32,943,622
Death Benefits	<u>959,264</u>	<u>1,025,734</u>
TOTAL	\$ 31,142,263	\$ 33,969,356
Retired Participants and Beneficiaries		
Retirement Benefits	\$ 312,464,897	\$ 340,689,087
Post-Retirement Death Benefits	<u>5,188,791</u>	<u>5,565,289</u>
TOTAL	\$ 317,653,688	\$ 346,254,376
Total Benefit Liabilities	\$ 724,254,742	\$ 763,212,365

St. Louis County Retirement Plans

Schedule C: Benefit Liabilities

Plan B – Police

	1/1/2015	1/1/2016
Active Employees		
Basic Retirement Benefit	\$ 114,067,275	\$ 119,892,141
Supplement to Age 65	13,094,516	13,926,043
Duty Death and Disability Benefit	3,416,454	3,601,105
Pre-Retirement Death Benefits	1,772,107	1,887,784
Post-Retirement Death Benefits	<u>339,987</u>	<u>364,135</u>
TOTAL	\$ 132,690,339	\$ 139,671,208
Vested Terminated Participants		
Basic Retirement Benefits	\$ 5,237,998	\$ 6,196,688
Death Benefits	<u>218,552</u>	<u>264,366</u>
TOTAL	\$ 5,456,550	\$ 6,461,054
Retired Participants and Beneficiaries		
Retirement Benefits	\$ 125,323,285	\$ 132,118,886
Post-Retirement Death Benefits	<u>1,019,776</u>	<u>1,090,725</u>
TOTAL	\$ 126,343,061	\$ 133,209,611
Total Benefit Liabilities	\$ 264,489,950	\$ 279,341,873

St. Louis County Retirement Plans

Schedule D: Investment Experience of the Fund

1. Market Value of Assets as of 12/31/2014	\$	598,677,911
2. Contributions to the Fund	\$	37,894,303
3. Benefits Paid	\$	52,192,047
4. Total 1 + 2 - 3	\$	584,380,167
5. Income (including unrealized gains and losses, and net of all investment fees and management expenses)	\$	10,527,670
6. Market Value of Assets as of 12/31/2015	\$	594,907,837
7. Average Fund Balance	\$	591,529,039
8. Investment Yield for 2015		1.8%
Investment Yield for 2014		5.5%
Investment Yield for 2013		18.1%
Investment Yield for 2012		14.3%
Investment Yield for 2011		(0.6%)
Investment Yield for 2010		17.0%
Investment Yield for 2009		22.7%
Investment Yield for 2008		(29.4%)
Investment Yield for 2007		5.9%
Investment Yield for 2006		12.5%

Summary of Plan Assets

Investments at Current Value

Investment Securities		
U. S. Government Securities	\$	11,051,827
Corporate Bonds and Debentures		19,403,311
Municipal Bonds		2,237,381
Common Stocks		391,296,850
Short-Term Investment Funds		3,163,008
Mortgage-Backed Securities		26,008,317
Fixed Income Investment – Mutual Funds		61,137,394
Hedge fund of funds		28,683,721
Real Estate Investment Trusts		<u>50,429,167</u>
Total of Investments	\$	593,410,976
Cash	\$	1,200,356
Accrued Interest and Dividends Receivable and Other		5,048,867
Accounts Payable		<u>4,752,362</u>
Market Value of Assets 12/31/2015	\$	594,907,837

St. Louis County Retirement Plans

Schedule E: Development of Actuarial Value of Plan Assets

			Plan A	Plan B	Total	
A.	Market Value of Assets - 1/1/2015		\$ 467,160,361	\$ 131,517,550	\$ 598,677,911	
B.	Expected Interest		\$ 37,372,829	\$ 10,521,404	\$ 47,894,233	
C.	Contributions		\$ 26,348,881	\$ 11,545,422	\$ 37,894,303	
D.	Expected Interest on Contributions		\$ 1,261,714	\$ 472,844	\$ 1,734,558	
E.	Benefits Paid		\$ 37,503,983	\$ 14,688,064	\$ 52,192,047	
F.	Expected Interest on Benefits		\$ 1,500,159	\$ 587,523	\$ 2,087,682	
G.	Expected Market Value of Assets 1/1/2016		\$ 493,139,643	\$ 138,781,633	\$ 631,921,276	
H.	Market Value of Assets at 1/1/2016		\$ 464,255,042	\$ 130,652,795	\$ 594,907,837	
I.	Gain/(Loss), 2015 (H – G)		\$ (28,884,601)	\$ (8,128,838)	\$ 37,013,439)	
J.	Gain/(Loss), not recognized in Actuarial Value					
	<u>Year</u>	<u>Portion Not Recognized</u>	<u>Total</u>	<u>Amount Not Recognized</u>		
	2015	3/4	\$ (37,013,439)	\$ (21,663,451)	\$ (6,096,629)	\$ (27,760,080)
	2014	1/2	\$ (14,354,246)	\$ (5,600,453)	\$ (1,576,670)	\$ (7,177,123)
	2013	1/4	\$ 49,851,771	\$ 9,700,211	\$ 2,762,732	\$ 12,462,943
	Total			\$ (17,563,693)	\$ (4,910,567)	\$ (22,474,260)
K.	Accrued Contributions for 2015		\$ 0	\$ 0	\$ 0	
L.	Actuarial Value of Assets as of January 1, 2016 (H – J + K), Max 120% of Market Value		\$ 481,818,735	\$ 135,563,362	\$ 617,382,097	
M.	Yield on Actuarial Value of Assets				9.5%	

St. Louis County Retirement Plans
Schedule F: Analysis of Change in Cost

Plan A - Civilian

	Amortization Payment	Normal Cost	Annual Cost
1. Annual Cost 1/1/2015	\$ 13,461,332	\$ 12,887,549	\$ 26,348,881
2. Anticipated Increase/(Decrease)	\$ 54,542	\$ (295,006)	\$ (240,464)
3. Increase Due to New Entrants	\$ 31,739	\$ 584,443	\$ 616,182
4. Investment Return	\$ (629,075)		\$ (629,075)
5. Increase/(Decrease) Due to Liability Experience:			
Salary	\$ (111,687)		\$ (111,687)
Mortality	\$ 106,836		\$ 106,836
Turnover	\$ (46,913)		\$ (46,913)
Retirement	\$ (66,779)		\$ (66,779)
Data Corrections and Other	\$ 13,173		\$ 13,173
Subtotal	\$ (105,370)		\$ (105,370)
6. Change in Normal Cost		\$ (111,333)	\$ (111,333)
7. Assumption Change	\$ 958,882	\$ 260,288	\$ 1,219,170
8. Change Due to Plan Amendment	\$ 0	\$ 0	\$ 0
9. Method Change	\$ 476,249	\$ 0	\$ 476,249
10. Annual Cost 1/1/2016	\$ 14,248,299	\$ 13,325,941	\$ 27,574,240

St. Louis County Retirement Plans

Schedule F: Analysis of Change in Cost (continued)

Net Cumulative Effect on Cost – Plan A – Civilian

	1/1/2014 Annual Cost	1/1/2015 Annual Cost	1/1/2016 Annual Cost	Net Cumulative Effect on Cost
Annual Cost Prior Year	\$ 26,553,932	\$ 25,964,790	\$ 26,348,881	
Anticipated Increase/(Decrease)	\$ 113,622	\$ (412,265)	\$ (240,464)	\$ (539,107)
Increase Due to New Entrants	429,490	510,496	616,182	1,556,168
Investment Return	(1,212,253)	(489,385)	(629,075)	(2,330,713)
Increase/(Decrease) Due To:				
Salary	\$ 409,707	\$ (689,782)	\$ (111,687)	\$ (391,762)
Mortality	(219,988)	(122,732)	106,836	(235,884)
Turnover	(2,119)	6,175	(46,913)	(42,857)
Retirement	83,841	(198,320)	(66,779)	(181,258)
Data Correction & Other	(69,208)	472,959	13,173	416,924
Change in Normal Cost	<u>(122,234)</u>	<u>23,558</u>	<u>(111,333)</u>	<u>(210,009)</u>
Subtotal	\$ 79,999	\$ (508,142)	\$ (216,703)	\$ (644,846)
Change Due to Assumptions	\$ 0	\$ 1,283,387	\$ 1,219,170	\$ 2,502,557
Change Due to Plan Amendment	\$ 0	\$ 0	\$ 0	\$ 0
Change Due to Method Change	\$ 0	\$ 0	\$ 476,249	\$ 476,249
Change Due to Amortization Extension	\$ 0	\$ 0	\$ 0	\$ 0
Annual Cost Current Year	\$ 25,964,790	\$ 26,348,881	\$ 27,574,240	

St. Louis County Retirement Plans

Schedule F: Analysis of Change in Cost (continued)

Plan B – Police

	Amortization Payment	Normal Cost	Annual Cost
1. Annual Cost 1/1/2015	\$ 6,979,116	\$ 4,566,306	\$ 11,545,422
2. Anticipated Increase/(Decrease)	\$ (24,531)	\$ 126,927	\$ 102,396
3. Increase Due to New Entrants	\$ 4,973	\$ 97,246	\$ 102,219
4. Investment Return	\$ (154,631)		\$ (154,631)
5. Increase/(Decrease) Due to Liability Experience:			
Salary	\$ (32,670)		\$ (32,670)
Mortality	\$ 60,458		\$ 60,458
Turnover	\$ (25,768)		\$ (25,768)
Retirement	\$ 125,404		\$ 125,404
Disability	\$ 0		\$ 0
Data Corrections and Other	\$ 44,220		\$ 44,220
Subtotal	\$ 171,644		\$ 171,644
6. Change in Normal Cost		\$ (99,715)	\$ (99,715)
7. Assumption Change	\$ 345,065	\$ 99,130	\$ 444,195
8. Change Due to Plan Amendment	\$ 0	\$ 0	\$ 0
9. Method Change	\$ 253,188	\$ 0	\$ 253,188
10. Annual Cost 1/1/2016	\$ 7,574,824	\$ 4,789,894	\$ 12,364,718

St. Louis County Retirement Plans

Schedule F: Analysis of Change in Cost (continued)

Net Cumulative Effect on Cost – Plan B – Police

	1/1/2014 Annual Cost	1/1/2015 Annual Cost	1/1/2016 Annual Cost	Net Cumulative Effect on Cost
Annual Cost Prior Year	\$ 10,074,606	\$ 10,237,296	\$ 11,545,422	
Anticipated Increase/(Decrease)	\$ 165,095	\$ 1,352	\$ 102,396	\$ 268,843
Increase Due to New Entrants	48,907	61,547	102,219	212,673
Investment Return	(359,472)	(133,890)	(154,631)	(647,993)
Increase/(Decrease) Due To:				
Salary	\$ 79,345	\$ 127,461	\$ (32,670)	\$ 174,136
Mortality	25,243	91,318	60,458	177,019
Turnover	33,006	14,504	(25,768)	21,742
Retirement	63,011	97,270	125,404	285,685
Disability	0	0	0	0
Data Correction & Other	78,829	218,393	44,220	341,442
Change in Normal Cost	<u>28,726</u>	<u>349,316</u>	<u>(99,715)</u>	<u>278,327</u>
Subtotal	\$ 308,160	\$ 898,262	\$ 71,929	\$ 1,278,351
Change Due to Assumption	\$ 0	\$ 480,855	\$ 444,195	\$ 925,050
Change Due to Plan Amendment	\$ 0	\$ 0	\$ 0	\$ 0
Change Due to Method Change	\$ 0	\$ 0	\$ 253,188	\$ 253,188
Change Due to Amortization Extension	\$ 0	\$ 0	\$ 0	\$ 0
Annual Cost Current Year	\$ 10,237,296	\$ 11,545,422	\$ 12,364,718	

St. Louis County Retirement Plans

Schedule G: Valuation of Current Accrued Benefits

	Plan A	Plan B	Total
I. Actuarial Present Value of Accrued Plan Benefits			
1. Vested Benefits			
Active Participants	\$ 12,875,322	\$ 50,911,264	\$ 263,786,586
Vested Terminated	33,969,356	6,461,054	40,430,410
Retired, Beneficiaries and Disabled	<u>346,254,375</u>	<u>133,209,611</u>	<u>479,463,986</u>
TOTAL	\$ 593,099,053	\$ 190,581,929	\$ 783,680,982
2. Non-Vested Benefits	<u>\$ 8,873,416</u>	<u>\$ 15,711,068</u>	<u>\$ 34,584,484</u>
3. Total Present Value of Accrued Plan Benefits: (1) + (2)	\$ 611,972,469	\$ 206,292,997	\$ 818,265,466
4. Assets at Market Value	\$ 64,255,042	\$ 130,652,795	\$ 594,907,837
5. Unfunded Accrued Benefits: (3) - (4)	\$ 147,717,427	\$ 75,640,202	\$ 223,357,629
6. Accrued Benefit Funded Ratio: (4) ÷ (3)	75.9%	63.3%	72.7%
7. Number of Employees Fully Vested	1,977	607	2,584
II. Reconciliation of Changes in Present Value			
1. Present Value of Accrued Plan Benefits 1/1/2015	\$ 575,808,509	\$ 193,008,920	\$ 768,817,429
2. Increase (Decrease) due to:			
Benefit Payments	\$ 37,503,983)	\$ (14,688,064)	\$ (52,192,047)
Interest	44,564,521	14,853,191	59,417,712
Assumption Change	12,857,989	4,753,862	17,611,851
Plan Amendment	0	0	0
Benefits Accumulated & Actuarial Experience	<u>16,245,433</u>	<u>8,365,088</u>	<u>24,610,521</u>
TOTAL	\$ 36,163,960	\$ 13,284,077	\$ 49,448,037
3. Present Value of Accrued Plan Benefits 1/1/2016	\$ 611,972,469	\$ 206,292,997	\$ 818,265,466

St. Louis County Retirement Plans
Schedule H: Reconciliation of Plan Participants

	Civilian			Police		
	<u>Active</u>	<u>Vested Terminated</u>	<u>Retired</u>	<u>Active</u>	<u>Vested Terminated</u>	<u>Retired</u>
1/1/2015	3,068	1,161	2,209	827	215	461
Deaths with Survivor			(16)			(3)
Deaths without Survivor	(4)		(32)			(5)
Retirees	(112)	(38)	150	(15)	(2)	17
Disabilities						
Vested Terminated	(77)	77		(24)	24	
Net Transfers	(2)			2		
Non-Vested Terminated	(172)			(21)		
New Entrants	355			63		
New Survivors			16			3
Return to Active	4	(4)		1	(1)	
Lump Sum Distribution						
Data Correction		(8)	(3)			
Level Income Expired						
1/1/2016	3,060	1,188	2,324	833	236	473
Average Age	48.0			39.0		
Average Service	12.2			11.9		
Average Salary	\$46,660			\$62,371		

St. Louis County Retirement Plans

Schedule I: Summary of Salary Increases from 2014 to 2015

Plan A - Civilian

<u>Attained Age 1/1/2016</u>	<u>Number of Participants</u>	<u>2014 Salary</u>	<u>2015 Salary</u>	<u>Salary Increase</u>
20-24	30	798,206	1,005,143	25.93%
25-29	168	5,472,043	6,161,976	12.61%
30-34	219	8,400,960	9,121,097	8.57%
35-39	237	9,691,314	10,348,508	6.78%
40-44	240	10,436,974	11,096,441	6.32%
45-49	363	16,085,792	16,799,445	4.44%
50-54	424	19,635,681	20,488,785	4.34%
55-59	508	24,562,987	25,548,069	4.01%
60-64	366	18,623,373	19,320,636	3.74%
65+	146	7,627,233	7,946,672	4.19%
All Ages	2,701	121,334,563	127,836,771	5.36%

Plan B – Police

<u>Attained Age 1/1/2016</u>	<u>Number of Participants</u>	<u>2014 Salary</u>	<u>2015 Salary</u>	<u>Salary Increase</u>
20-24	17	747,115	885,804	18.56%
25-29	116	5,814,508	6,280,471	8.01%
30-34	136	7,236,389	7,552,556	4.37%
35-39	120	6,877,343	7,146,058	3.91%
40-44	138	8,659,319	8,808,374	1.72%
45-49	124	8,485,810	8,817,674	3.91%
50-54	71	5,247,888	5,489,626	4.61%
55-59	30	2,324,422	2,396,294	3.09%
60-64	12	886,205	869,874	-1.84%
65+	5	364,578	373,834	2.54%
All Ages	769	46,643,577	48,620,564	4.24%

St. Louis County Retirement Plans

Schedule J: Actuarial Assumptions and Methods

Assumptions

Interest:

Current Year: 7.75% per year

Prior Year: 8.0% per year

Salary Increases:

Current Year: 4.25% per year

Plus additional increase as follows:

Employed on or after 1/1/2001	0% in final year
Employed after 1/1/1996 before 1/1/2001	3% in final year
Employed after 1/1/1991 before 1/1/1996	6% in final year
Employed after 1/1/1986 before 1/1/1991	9% in final year
Employed after 1/1/1981 before 1/1/1986	12% in final year
Employed after 1/1/1976 before 1/1/1981	15% in final year
Employed on or before 1/1/1976	18% in final year

Prior Year: 4.50% per year, with additional increases as shown in table above

Mortality:

Civilian plan mortality is a blended Fully Generational table consisting of 70% RP-2000 and 30% RP-2000 Blue Collar projected using Scale BB.

Police plan mortality is Fully Generational RP-2000 Blue Collar projected using Scale BB.

Termination:

Rates are shown below

Sample Rates (terminations per thousand)

Age	Civilian Service				Police
	0-1 years	1-2 years	2-3 years	3 or more years	Does not vary by years of service
25	220	165	110	77	56.6
30	220	165	110	66	53.0
35	220	165	110	66	46.0
40	220	165	110	44	37.8
45	220	165	110	33	29.2
50	220	165	110	33	18.8

St. Louis County Retirement Plans

Schedule J: Actuarial Assumptions and Methods (continued)

Assumptions

Retirement: Rates are shown below.

Sample Retirement Rates

Age	Civilian		Police	
	If Meet Rule of 80	Otherwise	If Meet Rule of 80	Otherwise
50	5%	0%	15%	0%
51	5%	0%	15%	0%
52	5%	0%	15%	0%
53	5%	0%	15%	0%
54	5%	0%	15%	0%
55	12%	5%	40%	5%
56	5%	5%	10%	5%
57	5%	5%	10%	5%
58	5%	5%	10%	5%
59	5%	5%	10%	5%
60	15%	5%	10%	5%
61	10%	5%	10%	5%
62	50%	20%	100%	100%
63	10%	10%	100%	100%
64	10%	10%	100%	100%
65	100%	100%	100%	100%

**Service Connected Death
and Disability (Police Plan only):** 1% per year

Expenses: None

St. Louis County Retirement Plans

Schedule J: Actuarial Assumptions and Methods (continued)

Methods

Cost Method

Projected Unit Credit Method. Under this method, the projected benefit of each participant is allocated to his years of service by level proration. The actuarial present value of benefits allocated to the current plan year is the normal cost, and the value of benefits allocated to prior plan years is the accrued liability. Actuarial gains and losses are recognized in the accrued liability as they emerge.

Amortization of Unfunded Liability

All future changes in the accrued liability due to amendments, gains and losses, and assumption changes are amortized over a 25 year period.

Full Funding Policy

If, at any valuation date, the value of plan assets exceeds the Projected Unit Credited Accrued Liability, then all amortizations will be accelerated to ten years. In effect, the contribution determined for the year will be the annual normal cost less a ten-year amortization of the overfunding. For this purpose, the value of plan assets will be the lesser of market or actuarial value.

Ancillary Benefits

These benefits are funded on the same basis as other benefits.

Asset Valuation Method

The actuarial value of assets is determined using a method that spreads over a four-year period the difference between the actual investment income and the expected income (based on the funding interest rate). The resulting value is constrained to be within the corridor from 80% to 120% of market value.

Changes in Actuarial Assumptions or Methods

1. The interest rate assumption was changed from 8.0% to 7.75% per year.
2. The basic salary increase was changed from 4.50% to 4.25% per year.
3. The period of amortization was changed from 30 years to 25 years.

St. Louis County Retirement Plans
Schedule K: Summary of Principal Plan Provisions

Plan A – Civilian

Eligibility: In general all salaried civilian employees are eligible. Entry date is the first of the month coinciding with or next closest in time to the date of commencement of full time employment. Exclusions: Members of Boards and Commissions, and employees whose customary employment is less than 30 hours per week, or less than 9 months per year.

Credited Service: All periods of participation.
 Credited Service terminates on earlier of date of termination or retirement.

Compensation: Aggregate compensation including any salary reduction amounts excluding reimbursed expenses and all other unusual compensation. For those participants hired on or after January 1, 1996, compensation is limited to the amounts allowed by Section 401(a)(17) of the Internal Revenue Code (\$265,000 in 2015 and 2016).

Service Retirement Date: Age 65 and 3 years of credited service.

Rule of Eighty Retirement Date: Sum of age and credited service equals or exceeds eighty (80).

Early Retirement Eligibility: Any combination of age and credited service from table below.

<u>Age</u>	<u>Service</u>
55	20
56	18
57	16
58	14
59	12
60	10

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan A – Civilian

Benefits:

Basic Retirement Benefit	1.5% of final average compensation times credited service.
Supplemental Benefit	\$15 per month per year of credited service payable from service retirement date.
Rule of Eighty Retirement	Computed in the same way as normal retirement.
Early Retirement Benefit	1.5% of final average compensation times credited service times actuarial reduction factor.
Late Retirement Benefit	Computed in the same way as basic retirement.
Pre-Retirement Death Benefit	The spouse of a deceased vested participant (who was either active or had terminated on or after 10/26/86) is eligible for a monthly benefit payable for life.

The amount of the Pre-Retirement Death Benefit is as follows:

If the Participant has attained the earliest retirement age, the amount of monthly income that would have been payable to the spouse if the Participant had retired the day before he died and the income was payable under the Survivor Annuitant Option with 100% continued to the spouse. This benefit would commence immediately.

If the Participant had not attained the earliest retirement age, the amount of monthly income that would have been payable to the spouse had the participant terminated employment the day before his death, survived to the earliest retirement age and retired electing the Survivor Annuitant Option with 100% continued to the spouse. This benefit would be payable when the Participant would have attained the earliest retirement age.

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan A – Civilian

Post-Retirement Death Benefits

1. For participants eligible for Early, Rule of Eighty or Normal Retirement at date of termination: \$10,000.
2. For other participants: None.

Duty Death Benefit

For a participant who dies as a direct and proximate result of injuries sustained while in performance of employment, (and death occurs within 2 years) the following monthly benefits are payable:

1. To the surviving spouse: 40% of participant's last monthly compensation.
2. To each surviving unmarried child under 18, 10% of last monthly compensation.

However, total benefits shall not exceed 75% of final compensation. Benefits above reduced by Social Security Benefits.

Benefits on Termination of Employment

A vested participant receives an annuity, beginning on his normal retirement date, of 1.5% of final average compensation times credited service.

A participant is vested if he has 5 years of credited service or if he is at least age 65 and his age plus credited service is at least 70, provided he has at least three (3) years of credited service.

Final Average Compensation

Average over the 36 consecutive months from the last 120 that produce highest average.

Cost of Living Adjustments

No automatic adjustments are made. A one-time increase was made for all retirees who retired prior to January 1, 1984. This increase was 5% of each retiree's original pension for each full year elapsed since retirement. This increase was doubled to 10% per year for retirees who retired prior to August, 1977. No increase was greater than 100%. This increase was effective January 1, 1986.

An additional increase was made effective for benefits payable on or after March 1, 1990. The increase was 12% for those who retired prior to January 1, 1984 and 6% for those who retired on or after January 1, 1984 but before January 1, 1988. There was no increase for those who retired on or after January 1, 1988.

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan A – Civilian

Cost of Living Adjustments (continued)

An additional increase was made effective for benefits payable on or after March 1, 1993 for retirees and survivors. The increase is 10% for those who retired prior to January 1, 1988 and 5% for those who retired on or after January 1, 1988 but before January 1, 1991. There was no increase for those who retired on or after January 1, 1991.

An additional increase was made effective for benefits payable on or after September 1, 1997 for retirees, survivors, service connected disability benefits and service connected death benefits. The increase is 15% for those retired prior to January 1, 1991 and 7.5% for those who retired on or after January 1, 1991 but before January 1, 1996. There was no increase for those retired on or after January 1, 1996.

An additional increase was made effective for benefits payable on or after May 1, 2001 for retirees, survivors, service connected disability benefits and service connected death benefits. The increase is 9% for those retired prior to January 1, 1997 and 4.5% for those who retired on or after January 1, 1997 but before January 1, 1999. There was no increase for those retired on or after January 1, 1999.

An additional increase was made effective for benefits payable on or after September 1, 2005 for retirees, survivors, service connected disability benefits and service connected death benefits. The increase is 9% for those retired prior to January 1, 2001 and 4.5% for those who retired on or after January 1, 2001, but before January 1, 2003. There was no increase for those retired on or after January 1, 2003.

Changes in Provisions from Prior Valuation

No changes since prior valuation.

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan B - Police

Eligibility:	All commissioned police officers of the St. Louis County Police Department.
Credited Service:	Same as under Plan A.
Compensation:	Aggregate compensation including any salary reduction amounts excluding reimbursed expenses and all other unusual compensation. For those participants hired on or after January 1, 1996, compensation is limited to the amounts allowed by Section 401(a)(17) of the Internal Revenue Code (\$265,000 in 2015 and 2016).
Service Retirement Date:	Age 60 with 10 years of credited service or age 65 with 3 years of credited service. (Not earlier than date of termination of employment.)
Rule of Eighty Retirement Date:	Sum of age and credited service equals or exceeds eighty (80).
Early Retirement Date:	Age 55 with 10 years of credited service.
Benefits:	
Basic Retirement Benefit	1.6% of final average compensation times credited service.
Supplement to Age 65	\$30 per month per year of credited service, payable from service retirement date to age 65 plus \$5 per month per year of credited service, payable for life.
Rule of Eighty Retirement	Basic Retirement Benefit plus Supplement, payable from Rule of Eighty Retirement Date.
Early Retirement Benefit	Basic Retirement Benefit plus Supplement, actuarially reduced.
Late Retirement Benefit	Computed in the same way as basic retirement.
Post-Retirement Death Benefit	<ol style="list-style-type: none"> 1. For participants eligible for Early, Rule of Eighty, Normal or Service Disability Retirement at date of termination: \$10,000. 2. For other participants: None.

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan B - Police

Duty Death Benefit

For a participant who dies as a direct and proximate result of injuries sustained while in performance of employment, (and death occurs within 2 years) the following monthly benefits are payable:

1. To the surviving spouse: 40% of participant's last monthly compensation.
2. To each surviving unmarried child under 18, 10% of last monthly compensation.

However, total benefits shall not exceed 75% of final compensation. Benefits above reduced by Social Security Benefits.

Duty Disability Benefit

For Total and Permanent Disability resulting from employment, the following monthly benefits are payable:

1. 50% of last monthly compensation, plus
2. 10% of last monthly compensation for each unmarried child under 18.

However, total benefit not to exceed 80% of final monthly compensation.

Benefit above reduced by:

1. 64% of Social Security benefits, and
2. 100% of Worker's Compensation benefits.

Pre-Retirement Death Benefit

The spouse of a deceased vested participant (who was either active or had terminated on or after 10/26/86) is eligible for a monthly benefit payable for life.

The amount of the Pre-Retirement Death Benefit is as follows:

If the Participant has attained the earliest retirement age, the amount of monthly income that would have been payable to the spouse if the Participant had retired the day before he died and the income was payable under the Survivor Annuitant Option with 100% continued to the spouse. This benefit would commence immediately.

If the Participant had not attained the earliest retirement age, the amount of monthly income that would have been payable to the spouse had the participant terminated employment the day before his death, survived to the earliest retirement age and retired electing the Survivor

Annuitant Option with 100% continued to the spouse. This benefit would have payable when the Participant would have attained the earliest retirement age.

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan B - Police

Benefits on Termination of Employment

A vested participant receives an annuity, beginning on his normal retirement date, of 1.6% of final average compensation times credited service.

A participant is vested if he has 5 years of credited service or if he is at least age 65 and his age plus credited service is at least 70, provided he has at least three (3) years of credited service.

Compensation

Final Average

Average over the 36 consecutive months from the last 120 that produce highest average.

Cost of Living Adjustments No automatic adjustments are made. A one-time increase was made for all retirees who retired prior to January 1, 1984. This increase was 5% of each retiree's original pension for each full year lapsed since retirement. This increase was doubled to 10% per year for retirees who retired prior to August, 1977. No increase was greater than 100%. This increase was effective January 1, 1986.

Cost of Living Adjustments

An additional increase was made effective for benefits payable on or after March 1, 1990. The increase was 12% for those who retired prior to January 1, 1984 and 6% for those who retired on or after January 1, 1984 but before January 1, 1988. There was no increase for those who retired on or after January 1, 1988.

An additional increase was made effective for benefits payable on or after March 1, 1993 for retirees and survivors. The increase is 10% for those who retired prior to January 1, 1988 and 5% for those who retired on or after January 1, 1988 but before January 1, 1991. There was no increase for those who retired on or after January 1, 1991.

An additional increase was made effective for benefits payable on or after September 1, 1997 for retirees, survivors, service connected disability benefits and service connected death benefits. The increase is 15% for those retired prior to January 1, 1991 and 7.5% for those who retired on or after January 1, 1991 but before January 1, 1996. There was no increase for those retired on or after January 1, 1996.

St. Louis County Retirement Plans

Schedule K: Summary of Principal Plan Provisions

Plan B – Police

Cost of Living Adjustments (continued)

An additional increase was made effective for benefits payable on or after May 1, 2001 for retirees, survivors, service connected disability benefits and service connected death benefits. The increase is 9% for those retired prior to January 1, 1997 and 4.5% for those who retired on or after January 1, 1997 but before January 1, 1999. There was no increase for those retired on or after January 1, 1999.

An additional increase was made effective for benefits payable on or after September 1, 2005 for retirees, survivors, service connected disability benefits and service connected death benefits. The increase is 9% for those retired prior to January 1, 2001 and 4.5% for those who retired on or after January 1, 2001, but before January 1, 2003. There was no increase for those retired on or after January 1, 2003.

Changes in Provisions from Prior Valuation

No changes since prior valuation.

St. Louis County Retirement Plans

Schedule L: Plan History

Plan A - Civilian

	2016 ⁽⁸⁾	2015 ⁽⁷⁾	2014	2013	2012 ⁽⁶⁾	2011	2010 ⁽⁵⁾	2009 ⁽⁴⁾	2008 ⁽³⁾	2007 ⁽²⁾	2006 ⁽¹⁾
1. Plan Participants											
a. Actives Under NRA	2,897	2,923	2,865	2,848	2,965	2,896	2,926	3,038	3,006	3,007	2,924
b. Inactive and Active Past NRA	163	3,515	3,420	3,291	3,164	3,080	3,046	2,938	2,889	2,833	2,724
c. Total	3,060	6,438	6,285	6,139	6,129	5,976	5,972	5,976	5,895	5,840	5,648
2. Present Value of Benefits											
	\$ 763,212,365	\$724,254,742	\$689,758,628	\$659,269,531	\$647,991,127	\$585,078,137	\$571,529,958	\$562,472,896	\$548,797,526	\$530,556,530	\$494,849,972
3. Valuation Assets											
	481,818,735	450,764,297	420,326,072	382,560,817	345,003,578	349,809,209	350,425,407	302,692,760	362,463,111	332,767,729	295,320,597
4. Unfunded Accrued Liability											
	281,393,630	163,668,345	160,811,884	172,219,375	192,843,839	133,278,809	116,742,323	147,373,370	74,957,406	83,154,726	91,744,042
5. County Normal Cost											
	13,325,941	12,887,549	12,738,395	12,389,298	12,762,322	12,054,234	12,177,245	12,534,530	12,306,929	12,144,247	11,493,953
6. Amortization Payment											
	14,248,299	13,461,332	13,226,395	14,164,634	15,860,947	10,961,865	9,601,780	12,121,109	8,108,555	8,995,304	9,924,458
7. Total County Cost: (5) +(6)											
	27,574,240	26,348,881	25,964,790	26,553,932	28,623,269	23,016,099	21,779,025	24,655,639	20,415,484	21,139,551	21,418,411
8. Earnings for Actives											
	142,780,407	138,298,787	138,888,219	130,827,512	135,388,262	135,094,717	137,657,943	141,470,278	134,444,417	130,243,712	125,397,641
9. County Costs as a % of Earnings											
a. Normal Cost	9.33%	9.32%	9.17%	9.47%	9.43%	8.92%	8.84%	8.86%	9.16%	9.32%	9.17%
b. Amortization Payment	9.98%	9.73%	9.52%	10.83%	11.71%	8.12%	6.98%	8.57%	6.03%	6.91%	7.91%
c. Total	19.31%	19.05%	18.69%	20.30%	21.14%	17.04%	15.82%	17.43%	15.19%	16.23%	17.08%

(1) Reflects a revision in actuarial assumptions

(2) Reflects an increase in benefit by a plan amendment

(3) Reflects a revision in actuarial assumptions

(4) Reflects a revision in actuarial assumptions and extension of amortization of unfunded liability

(5) Reflects a revision in actuarial assumptions

(6) Reflects a revision in actuarial assumptions

(7) Reflects a revision in actuarial assumptions

(8) Reflects a revision in actuarial assumptions and amortization method

St. Louis County Retirement Plans

Schedule L: Plan History (continued)

Plan B – Police

	2016 ⁽⁸⁾	2015 ⁽⁷⁾	2014	2013	2012 ⁽⁶⁾	2011	2010 ⁽⁵⁾	2009 ⁽⁴⁾	2008 ⁽³⁾	2007 ⁽²⁾	2006 ⁽¹⁾
1. Plan Participants											
a. Actives Under NRA	822	811	810	814	813	759	767	763	726	707	711
b. Inactive and Active Past NRA	11	692	655	633	595	577	533	514	495	432	432
c. Total	833	1,503	1,465	1,447	1,408	1,336	1,300	1,277	1,221	1,173	1,143
2. Present Value of Benefits	\$ 279,341,873	\$264,489,950	\$243,307,428	\$232,943,031	\$228,042,469	\$205,267,720	\$198,340,450	\$195,806,232	\$189,910,030	\$184,767,323	\$175,161,607
3. Valuation Assets	135,563,362	126,796,865	119,762,479	110,613,304	101,673,968	107,137,842	110,995,970	97,656,436	118,137,181	109,752,101	98,535,844
4. Unfunded Accrued Liability	143,778,511	84,854,928	74,243,970	75,040,027	79,418,640	56,023,135	45,537,635	54,522,839	29,823,366	32,460,915	34,467,463
5. County Normal Cost	4,789,894	4,566,306	4,130,906	3,902,742	3,804,404	3,326,044	3,581,620	3,708,957	3,603,375	3,541,272	3,380,465
6. Amortization Payment	7,574,824	6,979,116	6,106,390	6,171,864	6,531,994	4,607,770	3,745,362	4,484,374	3,226,158	3,511,476	3,728,535
7. Total County Cost: (5) +(6)	12,364,718	11,545,422	10,237,296	10,074,606	10,336,398	7,933,814	7,326,982	8,193,331	6,829,533	7,052,748	7,109,000
8. Earnings for Actives	51,954,979	50,938,684	48,132,114	45,633,400	45,438,855	43,020,898	44,419,461	44,578,698	40,802,269	38,989,297	37,872,634
9. County Costs as a % of Earnings											
a. Normal Cost	9.22%	8.96%	8.58%	8.55%	8.37%	7.73%	8.06%	8.32%	8.83%	9.08%	8.93%
b. Amortization Payment	14.58%	13.70%	12.69%	13.52%	14.38%	10.71%	8.43%	10.06%	7.91%	9.01%	9.84%
c. Total	23.80%	22.67%	21.27%	22.08%	22.75%	18.44%	16.49%	18.38%	16.74%	18.09%	18.77%

(1) Reflects a revision in actuarial assumptions

(2) Reflects an increase in benefit by a plan amendment

(3) Reflects a revision in actuarial assumptions

(4) Reflects a revision in actuarial assumptions and extension of amortization of unfunded liability

(5) Reflects a revision in actuarial assumptions

(6) Reflects a revision in actuarial assumptions

(7) Reflects a revision in actuarial assumptions

(8) Reflects a revision in actuarial assumptions and amortization method

St. Louis County Retirement Plans

Schedule M: Active Participant Distributions

Plan A – Civilian

As of January 1, 2016

Age/Service

Age	0	1	2	3	4	5	6	7	8	9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Grand Total	
16-19	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
20-24	38	19	6	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	69
25-29	70	67	39	25	16	13	-	7	2	2	2	-	-	-	-	-	-	-	243
30-34	59	41	37	25	20	19	9	20	15	15	23	-	-	-	-	-	-	-	283
35-39	28	37	25	18	18	9	10	18	21	22	45	21	-	-	-	-	-	-	272
40-44	26	23	16	14	10	9	13	9	12	18	47	62	10	2	-	-	-	-	271
45-49	33	38	15	18	15	10	4	18	15	19	51	85	53	27	1	-	-	-	402
50-54	23	25	29	9	15	9	13	17	13	16	53	68	54	65	39	-	-	-	448
55-59	28	26	17	11	14	10	20	11	22	17	64	79	53	57	56	53	2	2	540
60-64	8	17	12	20	9	12	11	12	17	19	38	50	27	33	31	42	19	19	377
65-69	7	3	3	3	2	4	-	4	4	7	16	15	9	12	6	11	13	13	119
70+	1	1	-	-	-	-	1	2	1	2	8	8	4	4	-	-	-	3	35
Grand Total	322	297	199	147	120	96	81	118	122	137	347	388	210	200	133	106	37	3,060	

St. Louis County Retirement Plans

Schedule M: Active Participant Distributions (continued)

Plan A – Civilian

As of January 1, 2016

Age/Salary

Age	Under 20,000	20,000- 24,999	25,000- 29,999	30,000- 34,999	35,000- 39,999	40,000- 44,999	45,000- 49,999	50,000- 54,999	55,000- 59,999	60,000- 64,999	65,000- 69,999	70,000- 74,999	75,000- 79,999	80,000 Plus	Grand Total
16-19	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
20-24	6	13	16	18	7	7	1	1	-	-	-	-	-	-	69
25-29	11	19	32	59	55	26	19	7	4	6	1	2	1	1	243
30-34	6	16	41	50	54	38	30	14	11	7	7	4	2	3	283
35-39	6	13	29	42	55	39	24	21	10	11	10	1	2	9	272
40-44	6	10	37	38	35	41	22	26	11	10	9	6	1	19	271
45-49	9	13	42	65	48	52	43	39	30	14	9	10	9	19	402
50-54	4	13	43	57	56	50	56	45	30	29	17	12	8	28	448
55-59	6	13	56	57	61	58	58	59	49	34	22	14	7	46	540
60-64	5	9	33	39	43	41	33	36	22	29	20	13	8	46	377
65-69	1	4	10	12	8	16	6	11	9	10	4	12	1	15	119
70+	-	1	3	5	4	8	2	6	1	1	1	-	1	2	35
Grand Total	60	124	343	442	426	376	294	265	177	151	100	74	40	188	3,060

St. Louis County Retirement Plans

Schedule M: Active Participant Distributions (continued)

Plan A – Civilian

As of January 1, 2016

Service/Salary

Service	Under 20,000	20,000- 24,999	25,000- 29,999	30,000- 34,999	35,000- 39,999	40,000- 44,999	45,000- 49,999	50,000- 54,999	55,000- 59,999	60,000- 64,999	65,000- 69,999	70,000- 74,999	75,000- 79,999	80,000 Plus	Grand Total
0	36	60	66	58	35	24	10	3	9	4	5	5	1	6	322
1	15	19	50	60	48	27	26	14	5	9	5	7	1	11	297
2	2	8	31	50	30	15	21	7	10	11	3	2	1	8	199
3	1	8	25	26	21	14	20	7	3	7	7	-	2	6	147
4	-	1	17	23	26	18	6	12	2	4	4	4	-	3	120
5	-	6	15	24	16	8	6	3	3	3	3	2	2	5	96
6	-	1	21	17	10	11	1	6	2	5	1	1	1	4	81
7	-	2	16	28	18	15	10	10	4	3	4	1	2	5	118
8	2	4	16	19	23	18	8	13	5	3	1	-	2	8	122
9	1	6	16	12	25	27	16	11	8	7	-	3	1	4	137
10-14	3	6	38	49	57	63	22	30	19	12	18	7	3	20	347
15-19	-	3	26	61	60	58	51	44	18	16	11	10	6	24	388
20-24	-	-	5	10	24	24	32	31	26	13	5	14	7	19	210
25-29	-	-	1	2	17	27	34	31	24	13	11	9	6	25	200
30-34	-	-	-	2	8	12	19	20	21	14	9	3	2	23	133
35-39	-	-	-	1	5	9	10	20	13	21	10	4	1	12	106
40+	-	-	-	-	3	6	2	3	5	6	3	2	2	5	37
Grand Total	60	124	343	442	426	376	294	265	177	151	100	74	40	188	3,060

St. Louis County Retirement Plans

Schedule M: Active Participant Distributions (continued)

Plan B – Police

As of January 1, 2016

Age/Service

Age	0	1	2	3	4	5	6	7	8	9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Grand Total
16-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	21	15	5	1	1	-	-	-	-	-	-	-	-	-	-	-	-	43
25-29	20	28	12	21	17	18	11	12	1	-	-	-	-	-	-	-	-	140
30-34	9	5	4	10	18	14	7	33	21	14	10	-	-	-	-	-	-	145
35-39	4	4	3	4	9	3	2	9	7	6	46	28	-	-	-	-	-	125
40-44	-	1	-	2	7	2	6	3	6	3	22	70	16	-	-	-	-	138
45-49	-	-	-	-	2	3	2	3	-	3	10	36	48	17	-	-	-	124
50-54	-	-	-	1	-	-	-	-	2	-	2	19	23	20	4	-	-	71
55-59	-	-	-	-	1	-	-	-	-	-	2	6	9	2	6	4	-	30
60-64	-	-	-	1	-	-	-	-	-	1	2	3	1	-	1	3	-	12
65-69	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	1	4
70+	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Grand Total	54	53	24	40	55	40	28	60	37	27	96	163	98	39	11	7	1	833

St. Louis County Retirement Plans

Schedule M: Active Participant Distributions (continued)

Plan B – Police

As of January 1, 2016

Age/Salary

Age	Under 20,000	20,000- 24,999	25,000- 29,999	30,000- 34,999	35,000- 39,999	40,000- 44,999	45,000- 49,999	50,000- 54,999	55,000- 59,999	60,000- 64,999	65,000- 69,999	70,000- 74,999	75,000- 79,999	80,000 Plus	Grand Total
16-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	1	-	-	8	7	4	11	10	1	1	-	-	-	-	43
25-29	-	-	-	2	14	3	17	68	22	9	3	1	1	-	140
30-34	1	-	1	1	4	3	7	69	29	16	12	-	1	1	145
35-39	-	-	-	2	2	-	7	28	32	24	19	8	1	2	125
40-44	-	-	-	-	-	1	5	16	28	33	21	20	9	5	138
45-49	-	-	-	-	-	-	1	6	16	22	18	17	14	30	124
50-54	-	-	-	-	-	-	-	2	6	10	6	16	9	22	71
55-59	-	-	-	-	-	-	-	-	4	3	-	1	8	14	30
60-64	-	-	-	-	-	-	1	-	1	2	2	1	2	3	12
65-69	-	-	-	-	-	-	-	-	-	1	1	-	1	1	4
70+	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Grand Total	2	-	1	13	27	11	49	199	139	121	82	64	46	79	833

St. Louis County Retirement Plans

Schedule M: Active Participant Distributions (continued)

Plan B – Police

As of January 1, 2016

Service/Salary

Service	Under 20,000	20,000- 24,999	25,000- 29,999	30,000- 34,999	35,000- 39,999	40,000- 44,999	45,000- 49,999	50,000- 54,999	55,000- 59,999	60,000- 64,999	65,000- 69,999	70,000- 74,999	75,000- 79,999	80,000 Plus	Grand Total
0	1	-	1	12	23	7	8	-	2	-	-	-	-	-	54
1	-	-	-	-	1	1	19	25	6	1	-	-	-	-	53
2	-	-	-	-	-	-	2	18	3	1	-	-	-	-	24
3	-	-	-	-	1	-	2	30	6	1	-	-	-	-	40
4	-	-	-	-	-	1	6	28	11	4	4	-	1	-	55
5	-	-	-	-	-	-	4	18	10	5	3	-	-	-	40
6	-	-	-	-	1	-	3	14	5	4	1	-	-	-	28
7	1	-	-	1	-	1	4	25	13	7	6	1	1	-	60
8	-	-	-	-	-	-	1	17	12	5	2	-	-	-	37
9	-	-	-	-	1	-	-	8	7	7	3	-	-	1	27
10-14	-	-	-	-	-	1	-	15	27	20	20	9	4	-	96
15-19	-	-	-	-	-	-	-	1	33	49	31	26	16	7	163
20-24	-	-	-	-	-	-	-	-	2	16	11	23	17	29	98
25-29	-	-	-	-	-	-	-	-	2	1	1	5	4	26	39
30-34	-	-	-	-	-	-	-	-	-	-	-	-	2	9	11
35-39	-	-	-	-	-	-	-	-	-	-	-	-	1	6	7
40+	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Grand Total	2	-	1	13	27	11	49	199	139	121	82	64	46	79	833