COUNTY EMPLOYEES' RETIREMENT FUND

COMPREHENSIVE ANNUAL FINANCIAL REPORT

FOR FISCAL YEAR JANUARY 1, 2016 – DECEMBER 31, 2016

COUNTY EMPLOYEES' RETIREMENT FUND
ANNUAL FINANCIAL REPORT
DECEMBER 31, 2016

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INTRODUCTORY SECTION

CERF

COUNTY EMPLOYEES'
RETIREMENT FUND

July 20, 2017

To the Board of Directors
County Employees' Retirement Fund
Jefferson City, MO 65101

We are pleased to provide this Comprehensive Annual Financial Report (CAFR) of the County Employees' Retirement Fund (CERF), for the fiscal year ended December 31, 2016. Responsibility for both the accuracy of the data and the completeness and fairness of the presentation in this CAFR rests with the management of CERF. To the best of management's knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of CERF.

Background Information

CERF was established by an act of the Missouri General Assembly effective August 28, 1994. CERF is a mandatory cost-sharing multiple employer retirement system for each county in the state of Missouri, except any city not within a county and counties of the first classification with a charter form of government, other than any county adopting a charter form of government after January 1, 2008. CERF covers county elective or appointive officers or employees whose position requires the actual performance of duties not less than 1,000 hours per year and does not cover circuit clerks, deputy circuit clerks, county prosecuting attorneys, and county sheriffs. CERF is a defined benefit plan providing retirement and death benefits to its members. Retirement benefits vest after 8 years of creditable service.

As of year-end 2016, CERF served more than 18,000 members, including over 4,700 retirees and beneficiaries.

Mission Statement

CERF's mission statement is to provide an accountable, financially sound system which promotes retirement security and rewards members with comprehensive benefits.

Accounting System and Reports

Management of CERF is responsible for establishing and maintaining internal controls designed to ensure that CERF's assets are protected from loss, theft, or misuse. Responsibility for the accuracy, completeness, and fair presentation of information, and all disclosures in this CAFR and in CERF's records, rests with CERF's management. Williams-Keepers, LLC, a certified public accounting firm, has audited the financial statements and related disclosures. The financial statement audit provides reasonable assurance that CERF's financial statements are presented in conformity with U.S. generally accepted accounting principles and are free from material misstatements. The internal controls are designed to provide reasonable, but not absolute, assurance that these objectives are met. The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived, and that the assessment of costs and benefits requires estimates and judgments by management.

2121 Schotthill Woods Drive ▪ Jefferson City, MO 65101
(573) 632-9203 ▪ Fax: (573) 761-4404

This report has been prepared in accordance with generally accepted accounting principles (GAAP) as promulgated by the Governmental Accounting Standards Board (GASB). GAAP requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of management's discussion and analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. CERF's MD&A can be found immediately following the independent auditors' report.

Fiscal Year 2016 Highlights

Fiscal highlights and major initiatives during 2016 were as follows:

- Significant time was spent on continued enhancements to the CARS benefit payment system, which was first implemented in July 2015. This project was completed on schedule and did not exceed budgeted costs.
- During early 2016, the County Portal was rolled out, allowing participant counties to use a secure website to upload payroll information and submit required forms directly to CERF.
- The Member Portal also went live in mid-2016. Participants can use the portal to perform benefit calculations, review beneficiary and personal information, and download annual statements.
- In August, a Communications Specialist was hired to oversee communication and outreach efforts to participants and counties.
- Two information technology (IT) audits were performed during the year with excellent results. One audit focused on a review of the general controls of the IT system, while the other focused on penetration testing of CERF systems.
- In late 2016, the IT department began researching increased building security and relocation of the disaster recovery site. Both of these initiatives were on-going at year end, and were completed in July 2017.
- In an effort to improve funded status, CERF pursued legislation to increase various county fees. CERF fees had not been increased since plan inception, although plan participants have well exceeded the initial projection of 7,500 members. In July 2017, Senate Bill 62 was signed, which is anticipated to result in an additional $8,000,000 in revenue to CERF annually.

Funded Status

The funded status measures the progress of accumulating the funds necessary to meet future obligations. As of December 31, 2016, the actuarial funded ratio of CERF declined from 69.11% to 66.7%, primarily as a result of an assumption change and the investment market experience being less than anticipated. A detailed discussion of funding is provided in the Actuarial Section of this report.

Investments

CERF's total pension return was 5.03% (net of fees), less than the expected rate of return of 7.75%. However, over long periods of time, CERF continues to produce investment returns that exceed CERF's objective. The annualized investment return for CERF over the last five years is 8.18%, and is 8.35% since inception.

A complete discussion of CERF's investment returns, activities, asset allocation strategy, and policies governing those activities can be found in the Investment Section.

Professional Services

Professional consultants are appointed by the Board of Directors to perform professional services that are essential to the effective and efficient operation of CERF. An opinion of the certified public accountant and the actuary are included in this report. The consultants appointed by the Board are listed on page 4 of this report.

Acknowledgments

This report, prepared by CERF's executive director and staff, is intended to provide comprehensive and reliable information about CERF, to demonstrate compliance with legal provisions, and to allow for the evaluation of responsible stewardship of CERF's funds.

This report is being provided electronically to all participant counties of the system. These offices form the link between CERF and its membership, and their cooperation contributes significantly to the success of CERF. We hope all readers of this report find it informative and useful. An electronic version of this report is available on CERF's website at **www.mocerf.org**.

We express our gratitude to the members of the Board, the staff, the consultants, and the many people who have worked so diligently to assure the continued successful operation of CERF.

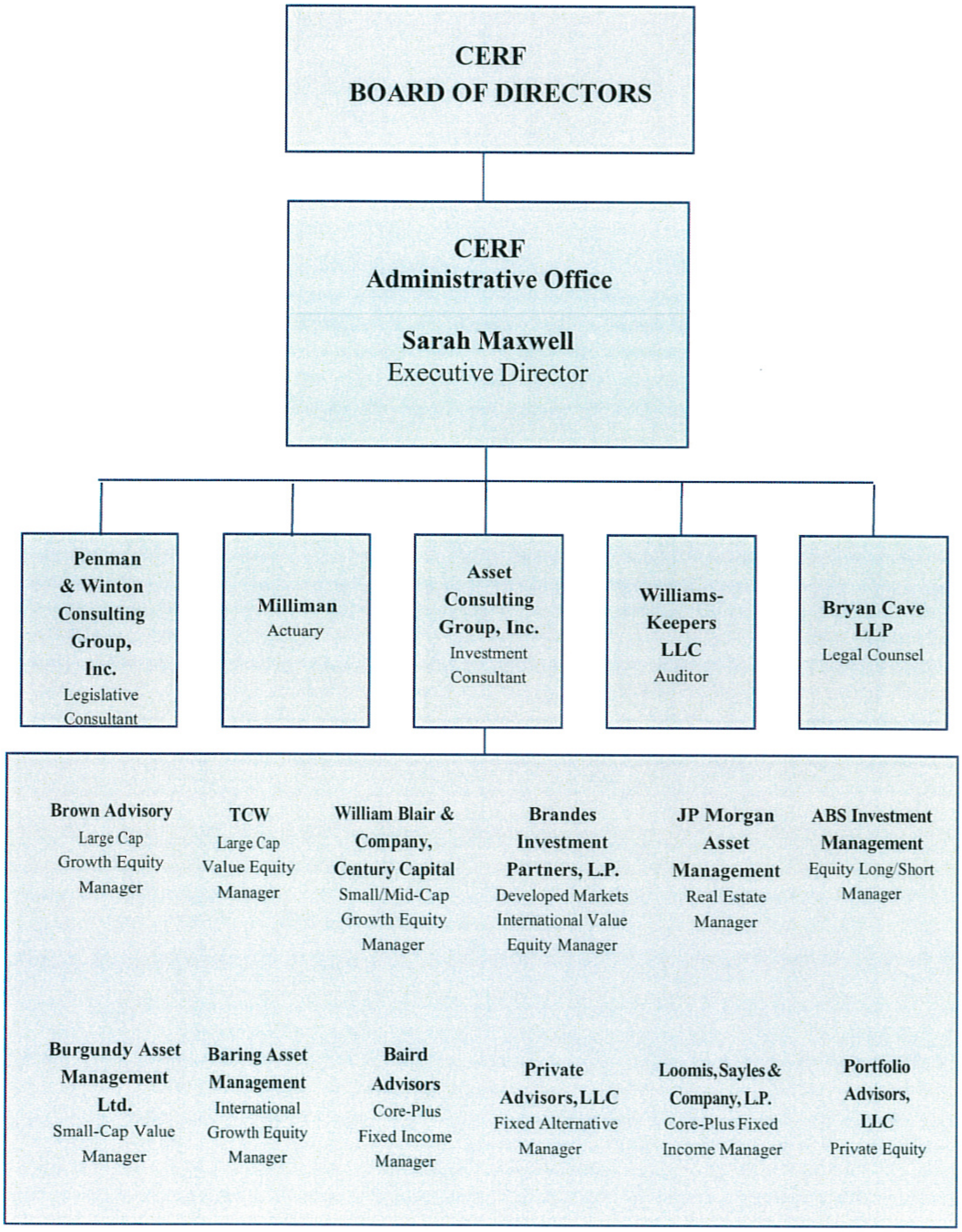
Respectfully submitted,

Sarah Maxwell
Executive Director

Kelly Schwartze

Kelly Schwartze, CPA
Assistant Deputy Director

ADMINISTRATIVE STRUCTURE

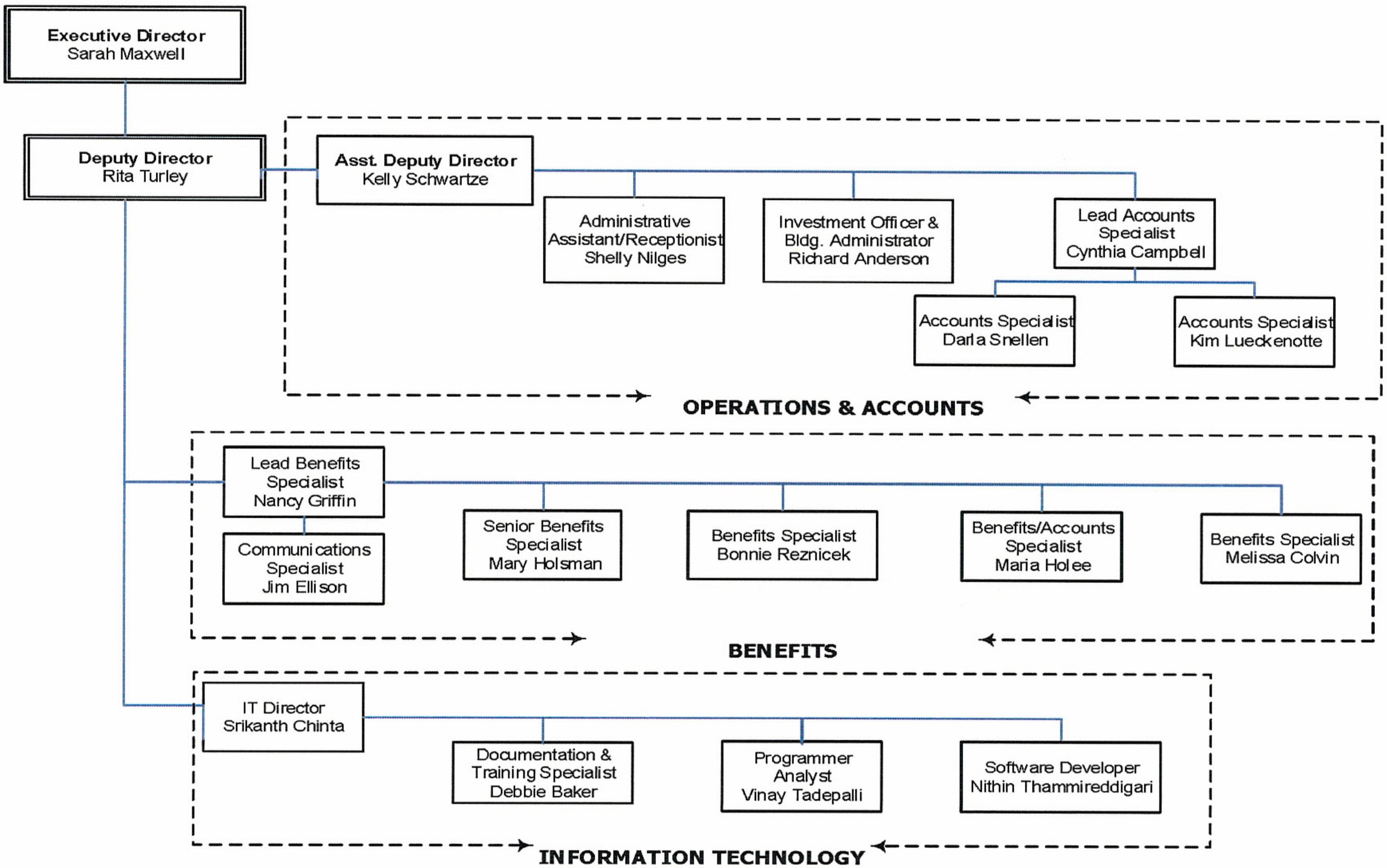


2016 Board of Directors

Tom Ruhl – Chair
Mark Bridges – Vice Chair
Conny Dover – Secretary
Jim Atchison – Member
Gary Emerson - Member

Rosemary Gannaway – Member
Jim Platt – Member
Mark Price – Member
Wayne Scharnhorst – Member
Sherry Shamel – Member

CERF Administrative Office



FINANCIAL SECTION

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

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3220 West Edgewood, Suite E, Jefferson City, MO 65109
OFFICE (573) 635-6196 FAX (573) 644-7240
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INDEPENDENT AUDITORS' REPORT

To the Board of Directors
County Employees' Retirement Fund

We have audited the accompanying financial statements of the County Employees' Retirement Fund ("CERF"), which comprise the statement of fiduciary net position as of December 31, 2016, the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the County Employees' Retirement Fund as of December 31, 2016, and the changes in fiduciary net position for the year then ended in accordance with U.S. generally accepted accounting principles.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis and the schedules of changes in the net pension liability, net pension liability, employer contributions, and investment returns and notes to the schedules as listed in the table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with U.S. generally accepted auditing standards, which consisted of inquires of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The supplementary information as listed in the table of contents is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with U.S. generally accepted auditing standards. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

The introductory, investment, actuarial, and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Williams Keepers LLC

July 20, 2017

COUNTY EMPLOYEES' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS

The following Management's Discussion and Analysis (MD&A) of the County Employees' Retirement Fund's (CERF) financial performance provides an introduction to the financial statements of CERF for the year ended December 31, 2016. Since the MD&A is designed to focus on current activities, resulting changes and current known facts, please read it in conjunction with the financial statements.

Required Financial Statements

CERF, a public employees' retirement plan, prepares its financial statements on the accrual basis in accordance with generally accepted accounting principles promulgated by the Governmental Accounting Standards Board (GASB). The Statement of Fiduciary Net Position includes all of CERF's assets and liabilities and provides information about the nature and amount of investments available to satisfy the pension benefits of the plan. All additions to and deductions from the net position held in trust for pension benefits are accounted for in the Statement of Changes in Fiduciary Net Position. This statement measures CERF's success over the past year in increasing the net position available for pension benefits.

Financial Analysis of CERF

Fiduciary Net Position

The fiduciary net position is essentially the GASB accounting term for the market value of assets. On a fair market value of assets (MVA) basis, the Fund's investment performance for year ended December 31, 2016 was below the assumed long-term return. On that basis the calculated return for the January 1, 2016 – December 31, 2016 fiscal year was 5.06% compared to 0.00% for the prior year. That performance resulted in an investment loss of $10.7 million.

Total Pension Liability

The total pension liability (TPL) refers to the actuarial accrued liability as calculated under the Entry Age Normal actuarial cost method in accordance with the GASB accounting standards. TPL increased from $625,859,932 as of December 31, 2015 to $675,788,763 as of December 31, 2016. Of the increase, $33.7 million is attributable to the normal operation of the plan over the year, benefit accruals plus interest minus benefit payments. The remaining increase was due to the net result of assumption changes and demographic experience. The mortality assumption was updated to reflect mortality improvements under improvement scale BB projected to 2022. The prior assumption projected mortality improvements to 2010 under improvement scale AA. Due to the assumption change, calculated TPL increased by approximately $30.3 million. In addition, there was approximately $14.0 million in actuarial gains from demographic experience differing from the assumptions.

Net Pension Liability

The net pension liability (NPL) is equal to the total pension liability minus the net fiduciary position. The net result of the investment losses relative to the expected long term rate of return and assumption changes was a decrease in the funded percentage from 69.1% as of December 31, 2015 to 66.7% as of December 31, 2016. The NPL increased from $193.4 million to $225.0 million.

Actuarially Determined Contribution

Differences between the actuarial liabilities and the assets can be made up through (1) future contributions in excess of the normal costs to amortize the shortfall and/or (2) the excess of actual investment returns over assumed returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in a systematic manner if future experience follows the assumptions. Since CERF's actual contributions are a combination of member contributions and county collected taxes, fees, and penalties, the actuarially determined contribution (ADC) is more of a measuring stick to assess the sufficiency of the current sources of contributions to CERF.

For 2016, the County portion of ADC was $25,608,251, net of both member and County-paid employee contributions. The actual County contributions for 2016 totaled $20,329,625, for a shortfall of $5,278,626.

Net Position

To begin the financial analysis, a summary of CERF's net position is as follows:

Condensed Statements of Fiduciary Net Position

	2016	2015	Dollar Change	Percent Change
Cash and cash equivalents	$ 2,603,661	$ 2,396,955	$ 206,706	9%
Receivables	3,597,132	8,082,877	(4,485,745)	-55%
Investments	443,899,810	428,587,409	15,312,401	4%
Invested securities lending collateral	54,540,361	81,871,298	(27,330,937)	-33%
Other assets	2,001	62,001	(60,000)	-97%
Capital assets, net	5,780,049	5,745,678	34,371	1%
Total assets	510,423,014	526,746,218	(16,323,204)	-3%
Liabilities	59,652,965	94,241,727	(34,588,762)	-37%
Total fiduciary net position	$ 450,770,049	$ 432,504,491	$ 18,265,558	4%

Net position increased by $18,265,558, or 4%, in 2016. This increase was a result of investment gains experienced during 2016. The significant decrease in receivables compared to prior year is due to approximately $3,000 in pending investment transactions at December 31, 2016, compared to $3.98 million at December 31, 2015. Securities lending collateral also decreased compared to prior year due to less investments on loan as of December 31, 2016.

Condensed Statements of Changes in Fiduciary Net Position

	2016	2015	Dollar Change	Percent Change
Additions:				
Contributions:				
Counties receipts	$ 20,329,625	$ 19,968,537	$ 361,088	2%
By members	11,588,772	11,519,437	69,335	1%
For members, paid by counties	2,142,332	1,517,407	624,925	41%
Members, purchase of prior service	68,655	78,904	(10,249)	-13%
Total contributions	34,129,384	33,084,285	1,045,099	3%
Net investment income (loss)	21,358,185	(289,388)	21,647,573	7480%
Net securities lending activities	208,523	384,014	(175,491)	-46%
Other income	5,287	4,945	342	7%
Total additions	55,701,379	33,183,856	22,517,523	68%
Deductions:				
Benefits	$ 28,423,305	$ 26,758,453	$ 1,664,852	6%
Refunds	3,037,078	3,142,804	(105,726)	-3%
Defined contribution plan match	3,133,484	2,861,751	271,733	9%
Administrative expenses	2,841,954	2,519,850	322,104	13%
Total deductions	37,435,821	35,282,858	2,152,963	6%
Net increase (decrease)	$ 18,265,558	$ (2,099,002)	$ 20,364,560	970%

Additions

Additions needed to fund benefits are accumulated through contributions, which include both county fee receipts and employee contributions, and returns on invested funds. Contributions for 2016 totaled $34,129,384, which was 3% above those received in 2015. Due to the legislation which took effect in 2003, as new employees continue to replace employees hired prior to February 25, 2002, employee contributions are expected to continue to rise.

For CERF, the year 2016 was relatively strong for commercial real estate and bonds, but domestic equity and international stocks performed below the benchmarks. The $21,647,573 increase in net investment income in 2016 is attributable to a favorable market environment in 2016 as compared to 2015. Consequently, the total rate of return for the CERF portfolio in 2016 was 5.57%, as compared to .38% in 2015. For 2016, the S&P 500 Index return was 11.96%, the BloomBar U. S. Aggregate Index was 2.65%, the Russell 2500 was 17.59%, the NFI ODCE Index was 7.73%, and the MSCI EAFE Index was 1.51%.

Beginning in January 2006, the Board of Directors authorized CERF to enter into a Securities Lending Agreement with Key Bank, thus allowing CERF to lend its securities to broker-dealers, for the purpose of providing additional income to CERF. In 2016, CERF experienced a net unrealized securities lending gain of $208,523, as compared to $384,014 in 2015.

When comparing returns, it is important to note that CERF's investment objectives should be pursued as long-term goals designed to maximize return while reducing exposure to undue risk, as set out in the Board's investment policy. At a minimum, it is the objective of CERF to meet its actuarial interest assumption on an ongoing basis. Beginning in 2015, the actuarial assumption for investment return was changed from 8% to 7.5%. The desired objective on a long-term basis is to achieve an excess return over the actuarial assumption, net of investment management fees and transaction costs. Long term is defined as greater than 10 years. Some of the results for the total fund are:

Period	Returns	Other Public Funds
One Year	5.03%	93rd Percentile
Three Years	3.09%	82nd Percentile
Five Years	8.18%	38th Percentile
Ten Years	5.56%	15th Percentile
Since Inception	8.35%	

Deductions

The expenses paid by CERF include benefit payments, refunds, a defined contribution plan match, and administrative expenses.

Expenses for 2016 totaled $37,435,821, an increase of $2,152,963 over 2015. The increase in benefit payments to members and beneficiaries resulted primarily from growth in the number of annuitants to 4,774 in 2016 from 4,519 in 2015 (an increase of 255 payees), as well as an increase of $1,664,852 required to pay benefits. There was also an increase of $271,733 in the amount necessary to make the defined contribution plan match for 2016. The amount of contributions refunded to terminated non-vested employees declined only slightly in 2016 compared to 2015. The increase in administrative expense was attributable to hardware purchases, the first full year of maintenance fees for the newly implemented pension system, an increase in depreciation expense, and an increase in salary expense due to the hiring of a Communications Specialist.

Economic Outlook

CERF's estimated investment gain for the six months ended June 30, 2017, is approximately 7.61%. CERF's investments as of June 30, 2017 total approximately $478,074,000, an increase of $34,174,000 since December 31, 2016, due to investment return in the first two quarters of the year. For the first six months of 2017, the S&P 500 Index return was 9.34%, the BloomBar U. S. Aggregate Index was 2.27%, the Russell 2500 was 5.97%, the NFI ODCE Index was 3.05%, and the MSCI EAFE Index was 14.23%.
On July 14, 2017, Senate Bill 62 became law. This bill increases CERF fees for the late filing of personal property tax declarations and delinquent property taxes, and creates new land list delinquent fees. The increased fees will become effective January 1, 2018, and are expected to result in an additional $8 million in revenue to CERF annually.

Requests for Information

This financial report is designed to provide the Board of Directors, our members, and other users of our financial report with a general overview of CERF's finances and to demonstrate CERF's accountability for the money it receives. If you have any questions about this report or need additional financial information, contact County Employees' Retirement Fund (CERF), 2121 Schotthill Woods Drive, Jefferson City, MO 65101.

COUNTY EMPLOYEES' RETIREMENT FUND

STATEMENT OF FIDUCIARY NET POSITION
December 31, 2016

ASSETS	
Cash	$ 2,603,661
Receivables:	
Member contributions	436,858
Member prior service contributions	124,008
County contributions	2,841,169
Receivable for pending investment sales	2,741
Accrued interest and dividends	192,356
Total receivables	3,597,132
Investments, at fair value:	
Common stocks	163,005,692
Fixed income mutual funds	105,096,623
Hedge funds	65,363,779
International equities funds	63,867,125
Real estate fund	19,631,664
Private equity	13,537,091
Cash equivalents	13,397,836
Total investments	443,899,810
Invested securities lending collateral	54,540,361
Other assets	2,001
Capital assets, net of accumulated depreciation of $2,735,423	5,780,049
Total assets	510,423,014
LIABILITIES	
Accounts payable	867,399
Accrued defined contribution plan funding	3,133,484
Other accrued expenses	89,027
Unearned revenue	28,292
Payable for pending investment purchases	349,637
Collateral for securities on loan	55,185,126
Total liabilities	59,652,965
Net position - restricted for pension benefits	$ 450,770,049

The notes to financial statements are an integral part of these statements.

COUNTY EMPLOYEES' RETIREMENT FUND

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
For the Year Ended December 31, 2016

ADDITIONS:	
Contributions:	
County receipts	$ 20,329,625
By members	11,588,772
For members, paid by counties	2,142,332
Members, purchase of prior service	68,655
Total contributions	34,129,384
Investment income:	
Investing activities:	
Net appreciation in fair value of investments	17,194,233
Fixed income securities	2,534,327
Equity securities	3,999,849
Alternative investments	55,190
Other miscellaneous income	27,091
Total investment income	23,810,690
Investment expenses	(2,452,505)
Net income from investing activities	21,358,185
Securities lending activities:	
Income	450,323
Expenses, net	(252,545)
Net increase in fair value of re-invested collateral	10,745
Net income from securities lending activities	208,523
Total net investment income	21,566,708
Other income	5,287
Total additions	55,701,379
DEDUCTIONS:	
Benefits	28,423,305
Refunds of member contributions	3,037,078
Defined contribution plan matching contribution	3,133,484
Administrative expense	2,841,954
Total deductions	37,435,821
Net increase	18,265,558
Net position - restricted for pension benefits	
Beginning of year	432,504,491
End of year	$ 450,770,049

The notes to financial statements are an integral part of these statements.

COUNTY EMPLOYEES' RETIREMENT FUND

NOTES TO FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of accounting: The financial statements of the County Employees' Retirement Fund ("CERF") are prepared using the accrual basis of accounting. Member and employer contributions are recognized in the period in which the contributions are due. Benefits are recognized when due and payable in accordance with the terms of the plan. Expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made.

Method used to value investments: Investments are reported at fair value. Short-term investments are reported at cost, which approximates fair value. Bonds and stocks traded on a national or international exchange are valued at the last reported sales price at current exchange rates as reported by independent pricing services. The values of real estate included in the real estate investment fund are based upon annual independent appraisals, updated quarterly, as provided by the fund manager. Investments that do not have an established market are reported at estimated fair value or net asset value as provided by investment or fund managers.

Governmental Accounting Standards Board (GASB) Statement No. 72, *Fair Value Measurement and Application*, which was adopted during the year ended December 31, 2016, addresses accounting and reporting issues related to fair value investments. This statement requires disclosures to be made about fair value investments, the level of fair value hierarchy, and valuation techniques. Comprehensive footnote disclosures regarding this statement can be found in note 3. Deposits and Investments.

Property and equipment: Property and equipment, including computer software programs, are stated at cost less accumulated depreciation. Depreciation is calculated using the straight-line method over the estimated lives of the assets ranging from three to fifty years.

Estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

2. PLAN DESCRIPTION

CERF was established by an act of the Missouri General Assembly effective August 28, 1994. Laws governing the retirement fund are found in Sections 50.1000-50.1300 of the Missouri Revised Statutes (RSMo). The Board of Directors consists of eleven members, nine of whom are county employee or retiree participants. Two members, who have no beneficiary interest in CERF, are appointed by the Governor of Missouri. The Board of Directors has the authority to adopt rules and regulations for administering the system.

CERF is a mandatory cost-sharing multiple employer retirement system for each county in the state of Missouri, except any city not within a county (which excludes the City of St. Louis) and counties of the first classification with a charter form of government. CERF covers county elective or appointive officers or employees whose position requires the actual performance of duties not less than 1,000 hours per year; including employees of circuit courts located in a first class, non-charter county which is not participating in the Local Government Employees Retirement System (LAGERS); and does not cover circuit clerks, deputy circuit clerks, county prosecuting attorneys, and county sheriffs. Until January 1, 2000, employees hired before January 1, 2000, could opt out of the system.

CERF is a defined benefit plan providing retirement and death benefits to its members. All benefits vest after 8 years of creditable service. Employees who retire on or after age 62 are entitled to an allowance for life based on the form of payment selected. The normal form of payment is a single life annuity. Optional joint and survivor annuity and 10-year certain and life annuity payments are also offered to members in order to provide benefits to a named survivor annuitant after their death. Employees who have a minimum of 8 years of creditable service and who terminated employment after December 31, 1999 may retire with an early retirement benefit and receive a reduced allowance after attaining age 55. Annual cost-of-living adjustments, not to exceed 1%, are provided for eligible retirees and survivor annuitants, up to a lifetime maximum of 50% of the initial benefit which the member received upon retirement. Benefit provisions are fixed by state statute and may be amended only by action of the Missouri Legislature. Administrative expenses for the operation of CERF are paid out of the funds of the system.

Contributions: Prior to January 1, 2003, participating county employees, except for those who participated in LAGERS, were required to make contributions equal to 2% of gross compensation. Effective January 1, 2003, participating county employees hired on or after February 25, 2002 are required to make contributions of 4% if they are in a LAGERS county and contributions of 6% if they are in a non-LAGERS county. If an employee leaves covered employment before attaining 8 years of creditable service, accumulated employee contributions are refunded to the employee. The contribution rate is set by state statute and may be amended only by action of the Missouri Legislature.

Counties may elect to make all or a portion of the required 4% contribution on behalf of employees. Total county-paid member contributions for the year ended December 31, 2016 was $2,142,332.

In addition, the following fees and penalties prescribed under Missouri law are required to be collected and remitted to CERF by counties covered by the plan:

- Late fees on filing of personal property tax declarations,
- Twenty dollars on each merchants and manufacturers license issued,
- Six dollars on each document recorded or filed with county recorders of deeds, with an additional one dollar on each document recorded,
- Three-sevenths of the fee on delinquent property taxes, and
- Interest earned on investment of the above collections prior to remittance to CERF.

The fees and penalties collected and remitted to CERF by counties covered by the plan for the year ended December 31, 2016, were as follows:

Delinquent property tax fees	$ 7,792,473	38.33%
Assessor late assessment filing fees	6,472,823	31.84%
Recorder document fees	4,955,962	24.38%
Merchants and manufacturers licenses	1,046,869	5.15%
Interest on the above fees	61,498	0.30%
	$20,329,625	100%

Members: CERF members include eligible employees of 111 counties in the State of Missouri. The number of members and benefit recipients served by the system at December 31, 2016 was:

Retirees and beneficiaries receiving benefits	4,774
Terminated employees entitled to but not yet receiving benefits	2,280
Current active plan members	11,303
Total	18,357

Tax status: The Internal Revenue Service has determined and informed CERF by letter dated September 28, 2011, that the plan as amended through November 1, 2010, is in a form acceptable under the Internal Revenue Code.

3. DEPOSITS AND INVESTMENTS

Custodial credit risk for deposits: Custodial credit risk is the risk that in the event of a bank failure, CERF's deposits may not be returned to it. At December 31, 2016, CERF's bank balances were secured by a combination of federal depository insurance and pledged collateral held in CERF's name by an agent of the depository bank.

Investments: Funds are invested by outside managers under policies established by the Board of Directors. The Board requires that its investment managers invest CERF's assets with the care, skill, and diligence a prudent person familiar with such matters acting in a like capacity would use in a similar enterprise with like objectives.

The following table summarizes CERF investments by type at December 31, 2016:

Common stocks	$ 163,005,692
Fixed income mutual funds	105,096,623
Hedge funds	65,363,779
International equities funds	63,867,125
Real estate fund	19,631,664
Private equity	13,537,091
Cash equivalents	13,397,836
Total	$ 443,899,810

CERF's investment policy permits investments in equity and fixed income (debt) securities and real estate, with guidelines for the percentage of the total for each category and for the type of investments within each category.

With respect to debt securities, the policy permits fixed and variable rate securities issued or guaranteed by the U.S. government, its agencies or instrumentalities; and U.S. government sponsored and other corporation securities. To manage interest rate and credit risks, two investment managers are used for debt securities, each operating under specific guidelines with respect to approved securities, duration, diversification, and minimum quality ratings by Moody's or Standard and Poor's.

Investment income in the statement of changes in fiduciary net position displays the realized and unrealized investment gains and losses from all investment types on the line item "Net appreciation (depreciation) in fair value of investments". Totals for interest, dividends, and other types of investment income are presented by broad categories of investments.

Interest rate risk: Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. CERF did not have any fixed income investments other than fixed income mutual funds as of December 31, 2016.

Credit risk: Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation to the plan. CERF did not have any debt securities investments as of December 31, 2016.

Concentration of credit risk: Concentration of credit risk is the risk of loss attributed to the magnitude of a plan's investment in a single issuer. CERF's investment guidelines require diversified portfolios with no single issue, excluding U.S. government securities, being greater than 5% of each manager's total portfolio value at cost or 7% at market value. As of December 31, 2016, no single issue exceeded the thresholds.

Money-Weighted Rate of Return: The annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was 5.06% for the year ended December 31, 2016. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for changing amounts actual invested.

Foreign currency risk: Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. The following is a summary of CERF's international equities funds showing the exposure to foreign currency risk as of December 31, 2016:

Australian Dollar	$ 764,612
Brazilian Real	2,250,480
China Yuan Renminbi	595,239
Denmark Danish Krone	310,624
Euro	17,305,789
Hong Kong Dollar	1,212,489
Israeli New Shekel	692,929
Japanese Yen	12,297,707
Korean Won	382,306
Mexican Peso	683,538
Russian Ruble	2,274,464
South African Rand	477,882
South Korean Won	2,130,561
Swedish Krona	571,614
Swiss Franc	3,497,779
Taiwan New Dollar	716,824
United Kingdom Pound	13,510,145
United States Dollar	4,192,143
Total	$ 63,867,125

Securities Lending Program:

Description of the program: CERF participates in a securities lending program administered by KeyBank National Association (the custodian). Under this program, the Board of Directors has authorized CERF to lend its securities to broker-dealers with a simultaneous agreement to return the collateral for the same securities in the future. At the initiation of a loan, borrowers are required to provide cash collateral at 102% of the market value of loaned securities. This cash collateral is then invested in certain qualified investments as detailed in the securities lending agreement. The maturities of the investments made with cash collateral do not generally match the maturity of security loans. There are no restrictions on the amount of securities that can be lent at one time. CERF does not have the ability to pledge or sell collateral securities unless the borrower defaults. CERF and the borrowers each maintained the right to terminate all security lending transactions on demand.

Transactions with borrowers during the period: Securities lent as of December 31, 2016 consisted of U.S. government and agency securities, U.S. equities, U.S. corporate bonds, and mortgage backed securities. The average term of securities loans was 1 day at December 31, 2016. The fair value, including accrued interest, of securities on loan was $53,082,338 as of December 31, 2016. Because the fair value of collateral held exceeded the fair value of securities lent at December 31, 2016, CERF had no credit risk exposure to borrowers as of that date. There were no losses during the year resulting from a default of the borrowers or the custodial bank.

Investment of cash collateral during the period: The weighted average duration of collateral investments was 1.7 days at December 31, 2016. The fair value of collateral investments was $54,540,361 as of December 31, 2016. CERF's securities lending policy states that in the event a security held in the collateral investments portfolio is downgraded below A3 by Moody's or A- by Standard and Poor's that a potential course of action be discussed. Such potential actions include selling the security as soon as possible or holding the security in the hopes of an improved market. As of December 31, 2016, 1.07% or $585,196, of the total market value of the collateral investments portfolio was in securities that had fallen below these minimum ratings thresholds. The fair value of collateral investments was $644,765 less than the liability for the collateral held for securities on loan as of December 31, 2016. The agreement between CERF and the securities lending agent does not provide for indemnification to CERF for any loss incurred as a result of CERF's participation in the program.

Securities lending income: Security lending income from CERF's share of income on investments made from cash collateral less borrower rebates and fees of the securities lending agent was $197,778 for 2016.

The following table summarizes duration by investment type as of December 31, 2016 for securities lending invested collateral subject to interest rate risk:

Investment	Fair Value	Effective Duration Rate
Repurchase agreements	$ 42,500,000	1-90 days
Commercial paper	6,698,694	1-5 days
Money market funds	4,756,376	1 day
Corporate notes	585,196	6-265 days
Asset backed securities	95	1 day
Total	$ 54,540,361	

The following table summarizes credit ratings by investment type as of December 31, 2016 for securities lending invested collateral subject to credit risk:

Moody's Credit Rating Level	Repurchase Agreements	Commercial Paper	Money Market Funds	Corporate Notes	Asset Backed Securities
Not rated	$ 33,500,000	$ 1,999,326	$ 4,756,376	$ 585,196	$ -
P1	9,000,000	4,699,368	-	-	-
Ca	-	-	-	-	95
Total	$ 42,500,000	$ 6,698,694	$ 4,756,376	$ 585,196	$ 95

CERF categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

- Level 1 – unadjusted quoted prices for identical instruments in active markets.
- Level 2 – quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations for which all significant inputs are observable.
- Level 3 – valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument and should not be perceived as the particular investment's risk.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. CERF's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability.

Equities within all asset classes that are classified in Level 1 are valued using prices quoted in active markets for those securities. Equity securities classified in Level 2 are securities whose values are derived daily from associated traded securities. Equity securities classified in Level 3 are valued with last trade data having limited trading volume.

Fixed income securities within all asset classes that are classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. Level 2 fixed income securities have non-proprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market.

The fair values of investments in certain funds are based on the investments' net asset value (NAV) per share (or its equivalent) and are presented in the above table. Investments that are measured at fair value using the net asset value (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

Investments by Fair Value	Total	Level 1	Level 2	Level 3
Equity securities				
Domestic common stock				
Consumer discretionary	$ 22,879,139	$ 22,879,139	$ -	$ -
Consumer staples	9,088,026	9,088,026	-	-
Energy	5,886,398	5,886,398	-	-
Financials	25,021,614	25,021,614	-	-
Healthcare	19,495,711	19,495,711	-	-
Industrials	19,974,299	19,974,299	-	-
Information technology	39,111,454	39,111,454	-	-
Materials	6,319,952	6,319,952	-	-
Real estate	3,459,401	3,459,401	-	-
Telecommunication services	3,010,418	3,010,418	-	-
Utilities	1,151,542	1,151,542	-	-
Total domestic common stock	155,397,954	155,397,954	-	-
International common stock				
Financials	182,149	182,149	-	-
Materials	288,048	288,048	-	-
Healthcare	242,182	242,182	-	-
Consumer discretionary	1,530,934	1,530,934	-	-
Other	1,291,748	1,291,748	-	-
Information technology	2,235,896	2,235,896	-	-
Energy	422,253	422,253	-	-
Consumer staples	198,096	198,096	-	-
Real estate	465,767	465,767	-	-
Utilities	750,665	750,665	-	-
Total international common stock	7,607,738	7,607,738	-	-
Partnerships	686,135	686,135	-	-
Fixed income mutual funds	57,955,496	57,955,496	-	-
Total investments at fair value	221,647,323	$ 221,647,323	$ -	$ -
Invested securities lending collateral				
Commercial paper	6,698,695	$ -	$ 6,698,695	$ -
Repurchase agreements	43,085,291	-	43,085,291	-
Mutual funds	4,756,375	-	4,756,375	-
Total invested securities lending collateral	54,540,361	$ -	$ 54,540,361	$ -
Investments exempt from fair value hierarchy				
Short term investments	13,049,381			
Investments measured at net asset value (NAV)				
Commingled international equity funds	63,867,125			
Commingled fixed income fund	47,142,685			
Commingled real estate investment fund	19,631,664			
Hedge funds	64,677,645			
Private equity limited partnership funds	13,537,091			
Total investments measured at NAV	208,856,210			
Total	$ 498,093,275			

Reconciliation to Statement of Fiduciary Net Position	
Total	$ 498,093,275
Securities lending collateral	(54,540,361)
Receivable for pending investment sales	(2,741)
Payable for pending investment purchases	349,637
Investments per Statement of Fiduciary Net Position	$ 443,899,810

Investments Measured at Net Asset Value	Total	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Commingled international equity funds	$ 63,867,125	$ -	Daily, monthly	1-7 days
Commingled fixed income fund	47,142,685	-	Daily	1 day
Commingled real estate investment fund	19,631,664	-	Quarterly	45 days
Hedge funds				
Long/short equity fund	40,828,630	-	Quarterly	45 days
Stable value fund	23,849,015	-	N/A*	N/A*
Private equity limited partnership funds	13,537,091	17,303,856	Not eligible	N/A
Total investments measured at NAV	$ 208,856,210	$ 17,303,856		

*In liquidation

Commingled international equity funds, fixed income fund, and real estate investment funds: Consisting of two international equity funds (long-term capital appreciation), one fixed income fund (high total investment return through current income and capital appreciation), and one real estate investment fund (high level of current income with moderate appreciation), these funds are considered commingled in nature. These funds are valued at NAV of units held at the end of period based upon the fair value of the underlying investments.

Long/short equity hedge fund: Consisting of one fund, this strategy invests in both long and short in global equity marketable securities, and can be both long and short in its positioning. This fund seeks to provide diversification by holding a number of funds within a single fund structure. This investment is valued at NAV and is redeemable quarterly.

Stable value hedge fund: Consisting of one fund, this strategy employs diversified fixed income allocations in order to provide a more stable risk and return profile than traditional fixed income funds. This fund seeks to provide diversification by holding a number of funds within a single fund structure. This investment is valued at NAV, and is currently pending liquidation. All funds are expected to be liquidated prior to 2019.

Private equity limited partnership funds: Consisting of two funds, these investments are valued at NAV. The funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 10 years.

4. CAPITAL ASSETS

Capital assets consist of the following as of December 31, 2016:

	January 1, 2016	Additions/ Transfers In	Disposals/ Transfers Out	December 31, 2016
Assets not being depreciated:				
Land	$ 932,050	$ -	$ -	$ 932,050
Total assets not being depreciated	932,050	-	-	932,050
Assets being depreciated:				
Building	3,022,819	-	-	3,022,819
Equipment, furnishings and computer software	4,381,404	299,265	(120,065)	4,560,604
Total assets being depreciated	7,404,223	299,265	(120,065)	7,583,423
Less accumulated depreciation	2,590,595	264,894	(120,065)	2,735,424
Net assets being depreciated	4,813,628	34,371	-	4,847,999
Total capital assets	$ 5,745,678	$ 34,371	$ -	$ 5,780,049

5. NET PENSION LIABILITY OF EMPLOYERS

The components of the net pension liability of employers as of December 31, 2016 are as follows:

Year Ended	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Employee Payroll (c)	NPL as a % of Covered Payroll ((a-b)/c)
12/31/2016	$ 675,788,763	$ 450,770,049	$ 225,018,714	66.70%	$ 391,801,920	57.43%

Actuarial assumptions

Actuarial valuations of the Plan involve estimates of the reported amount and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and future compensation increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

The purpose of the schedule of net pension liability is to present multi-year trend information about whether the Plan's fiduciary net position is increasing or decreasing over time relative to the total pension liability. This schedule is presented in the required supplementary information following the notes to the financial statements. Until a full 10-year trend is completed, the multi-year information will be added as it becomes available.

The total pension liability as of December 31, 2016, was based on the most recent actuarial valuation as of December 31, 2015, rolled forward to December 31, 2016, using the following actuarial assumptions. An actuarial experience study is performed every 5-years. The most recent actuarial experience study covered the period 2008 through 2013. The next actuarial experience study will be performed in 2019 and will cover the period 2014 through 2018.

Actuarial cost method	Entry age normal
Investment rate of return	7.5%
Inflation	2.5%
Compensation increases	2.5%, plus merit
Mortality rates	RP-2000 Combined Mortality projected to 2022 using Scale BB

Sensitivity of the net pension liability

The sensitivity of the net pension liability of employers to changes in the discount rate is presented below.

As of December 31, 2016, the net pension liability calculated using the discount rate of 7.5% is presented as well as what the employers' net pension liability would be using a discount rate that is 1% lower (6.5%) or 1% higher (8.5%) than the current rate.

	1% Decrease (6.5%)	Current Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$314,559,649	$225,018,714	$150,732,481

Long-term expected rate of return

The long-term expected rate of return on the Plan's investments was determined using a building-block method in which best-estimate ranges of expected future real rates of returns (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Plan's target allocations for 2016 are summarized below along with the long term geometric return. Geometric return (also referred to as the time weighted return) is considered standard practice within the investment management industry. Geometric returns represent the compounded rate of growth of a portfolio. The method eliminates the effects created by cash flows.

		Long-Term Arithmetic Basis	
Asset Class	Target Asset Allocation	Expected Real Return	Weighted Expected Real Return
U.S. Large Cap Equity	25.00%	6.10%	1.53%
Core Plus	21.00%	2.90%	0.61%
Non-U.S. Equity	15.00%	6.19%	0.93%
Long/Short Equity	10.00%	6.46%	0.65%
U.S. Small Cap Equity	10.00%	6.62%	0.66%
Absolute Return	9.00%	4.01%	0.36%
Core Real Estate	5.00%	5.48%	0.27%
Private Equity	5.00%	7.16%	0.36%
Total	100.00%		5.36%
		Inflation	2.50%
		Long-term expected geometric return	7.86%

The discount rate used to measure the total pension liability as of December 31, 2016 was 7.5%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current statutory rates and that contributions from employers will be made based on the Plan's revenue sources (various fees and penalties paid to the counties). Such revenue was assumed to increase at the rate of 1% per year. This increase assumption has been used by the Plan in prior funding status projections. Historically, revenue increase has averaged more than 1% per year. Based on the assumptions, the Plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members. The projections covered an 80-year period into the future. The long-term expected rate of return on the Plan's investments was applied to projected benefit payments.

6. PRIOR SERVICE CONTRIBUTIONS

An eligible county employee who was employed prior to CERF's inception on August 28, 1994, is considered to have prior service. If the employee was working on June 10, 1999, and worked through January 1, 2000, the prior service is awarded. This means the employee does not have to purchase the service to have it deemed creditable. If the employee did not work continually from June 10, 1999, through January 1, 2000, the prior service must be purchased to become creditable. The prior service is calculated at the time of retirement and can be paid in one lump sum or over a period of up to 48 months. The monthly pension benefit is reduced by the buyback amount until the prior service has been paid in full.

An eligible county employee who was employed on January 1, 1990, but not employed on August 28, 1994, and who had at least eight years of service is classified as a special consultant. A special consultant can elect to purchase eight years or more of their service in order to receive a CERF benefit. Since a special consultant would have terminated employment prior to CERF's inception, they are required to make a larger buyback and must pay at least 50% of this amount up front. The remaining amount is deducted from the monthly pension benefit for up to 48 months.

An eligible county employee who opted out of the system prior to January 1, 2000, had the option to become a member within three months of the three year anniversary of the decision to opt out. Upon deciding to opt in to the system, such employee either purchased in total or began payroll deductions to purchase all or part of their prior creditable service plus interest over a maximum period of four years. Such amounts were recognized as contributions when received by CERF.

The receivables for member prior service contributions shown on the accompanying statements of fiduciary net position represent the total amount, as of December 31, 2016, that are due in future periods from retirees who have elected to purchase prior service.

7. RETIREMENT PLANS FOR FUND EMPLOYEES

All full-time employees of CERF are eligible for participation in a defined contribution plan. CERF contributes 6% of a participating employee's monthly gross salary to the plan. The contribution requirements of the plan are governed by the plan document, which may be amended by the Board of Directors. Employees do not contribute to the retirement plan. Employees become vested in contributions made by CERF after 5 years of creditable service. Total contributions for the year ended December 31, 2016 were $78,795.

All full-time employees are eligible for participation in an Internal Revenue Code (IRC) 457 deferred compensation plan upon their eligibility in the defined contribution plan.

8. DEFINED CONTRIBUTION AND DEFERRED COMPENSATION PLANS

Plan description: Effective January 1, 2000, CERF also administers a defined contribution plan and an IRC Section 457 deferred compensation plan. Members of the pension plan are eligible to participate. The plans were established to provide an opportunity for members of the pension plan to have additional retirement benefits. The plans' provisions and contribution requirements are established and may be amended only by action of the Missouri Legislature.

Contributions: Pension plan members who are not members of LAGERS are required to contribute 0.7% of gross compensation to the defined contribution plan. Contributions of $994,600 were made during the year ended December 31, 2016. Participation in the 457 plan is voluntary. The level of contributions to the 457 plan is elected by the employee, subject to the limitations of IRC Sections 401(a) and 457. CERF's Board of Directors determines if matching contributions from the pension plan trust funds for a calendar year will be made to the defined contribution plan accounts of those who participated in the 457 plan and met the applicable service criteria during the plan year. The amount of any matching contribution is limited to an amount not needed to keep the pension plan actuarially sound. The matching contribution is also limited to 50% of a member's voluntary contributions to the 457 plan, up to 3% of the member's compensation. Members vest in the matching portion of contributions allocated to their respective accounts after five years of creditable service. Matching contributions for the year ended December 31, 2016 were $3,133,484.

Administration: Maintenance of individual member accounts and custody of assets have been contracted to a third party administrator and investment custodian, respectively. Member contributions are sent directly to the third party administrator by the counties. Members can self-direct investments of their contributions and their respective share of matching contributions in a number of investment options. Separate trust funds are maintained for the defined contribution and 457 plan assets.

Because CERF does not hold the plans' assets and does not have significant administrative responsibilities, the plans' assets and changes in net assets are not reported in CERF's financial statements.

9. RISK MANAGEMENT

CERF is exposed to various risks of loss related to natural disasters, errors and omission, loss of assets, torts, etc. CERF has chosen to cover such losses through the purchase of commercial insurance. There have been no significant insurance claims filed or paid during the past three years.

10. SUBSEQUENT EVENT

On July 14, 2017, Senate Bill 62 became law. This bill increases CERF fees for the late filing of personal property tax declarations and delinquent property taxes, and creates new land list delinquent fees. The increased fees will become effective January 1, 2018, and are expected to result in an additional $8 million in revenue to CERF annually.

COUNTY EMPLOYEES' RETIREMENT FUND

REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
For the Years Ended December 31, 2016, 2015 and 2014

	2016	2015	2014
Total pension liability			
Service cost	$ 18,004,559	$ 17,052,205	$ 13,595,040
Interest cost	47,131,401	44,726,570	41,986,362
Difference between actual and expected experience	(14,041,749)	9,248,266	(1,804,223)
Benefit payments, including refunds of member contributions	(31,460,383)	(29,901,257)	(27,411,906)
Effect of assumption changes or inputs	30,295,003	33,428,440	-
Net change in total pension liability	49,928,831	74,554,224	26,365,273
Total pension liability - beginning of year	625,859,932	551,305,708	524,940,435
Total pension liability - end of year	$ 675,788,763	$ 625,859,932	$ 551,305,708
Plan fiduciary net position			
Employer contributions	$ 20,329,625	$ 19,968,537	$ 19,781,514
Member contributions	13,799,759	13,115,748	11,899,932
Net investment return	21,571,995	99,571	17,958,335
Benefit payments, including refunds of member contributions	(31,460,383)	(29,901,257)	(27,411,906)
Defined contribution plan match	(3,133,484)	(2,861,751)	(2,696,164)
Administrative and other expenses	(2,841,954)	(2,522,685)	(2,125,444)
Net change in Plan fiduciary net position	18,265,558	(2,101,837)	17,406,267
Plan fiduciary net position - beginning of year	432,504,491	434,606,328	417,200,061
Plan fiduciary net position - end of year	450,770,049	432,504,491	434,606,328
Net pension liability - end of year	$ 225,018,714	$ 193,355,441	$ 116,699,380

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

COUNTY EMPLOYEES' RETIREMENT FUND

REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF NET PENSION LIABILITY
For the Years Ended December 31, 2016, 2015 and 2014

Year Ended	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Employee Payroll (c)	NPL as a % of Covered Payroll ((a-b)/c)
12/31/2016	$ 675,788,763	$ 450,770,049	$ 225,018,714	66.70%	$ 391,801,920	57.43%
12/31/2015	625,859,932	432,504,491	193,355,441	69.11%	372,165,232	51.95%
12/31/2014	551,305,708	434,606,328	116,699,380	78.83%	371,471,731	31.42%

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

COUNTY EMPLOYEES' RETIREMENT FUND

REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF EMPLOYER CONTRIBUTIONS

Year Ended December 31	Actuarially Determined Contribution	Actual Employer Contributions	Contribution Excess/ (Deficiency)	Actual Covered Member Payroll	Contributions as a % of Covered Payroll
2007	$ 12,949,951	$ 19,760,207	$ 6,810,256	$ 317,301,810	6.23%
2008	16,149,220	20,053,257	3,904,037	330,788,272	6.06%
2009	19,974,884	20,347,932	373,048	347,697,487	5.85%
2010	19,353,216	19,739,918	386,702	356,101,368	5.54%
2011	17,641,319	19,364,023	1,722,704	349,451,052	5.54%
2012	18,663,294	19,919,125	1,255,831	352,112,336	5.66%
2013	19,441,738	20,348,888	907,150	358,016,680	5.68%
2014	18,623,038	19,781,514	1,158,476	366,151,670	5.40%
2015	22,051,507	19,968,537	(2,082,970)	372,165,232	5.37%
2016	25,608,251	20,329,625	(5,278,626)	391,801,920	5.19%

COUNTY EMPLOYEES' RETIREMENT FUND

REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF INVESTMENT RETURNS

	Investment Returns, Net of Investment Expenses	
Year Ended December 31	Time Weighted	Money Weighted
2007	6.20%	*
2008	-23.60%	*
2009	22.90%	*
2010	14.00%	*
2011	-0.50%	*
2012	13.20%	*
2013	19.30%	*
2014	4.30%	4.34%
2015	0.00%	0.00%
2016	5.03%	5.06%

**CERF has calculated the annual time-weighted returns since inception in 1995. However, data for the money-weighted returns is only available starting with 2014.*

COUNTY EMPLOYEES' RETIREMENT FUND

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

The information presented in the required supplementary information was determined as part of the most recent actuarial valuation as of December 31, 2015, rolled forward to December 31, 2016. Additional information as of these actuarial valuations follows.

Changes in benefit terms: On October 1, 2007, significant benefit improvements were made for members retiring on or after that date. The cost impact of the improvements was first incorporated in 2008.

Actuarial methods and assumptions: The actuarially determined contribution rates in the schedule of employers' contributions are calculated as of January 1 of the respective calendar year.

The following actuarial methods and assumptions were used to determine contribution rates reported in the schedule as of December 31, 2016.

Actuarial cost method	Entry age normal
Amortization method:	
Level percent or dollar	Level percent
Closed, open, or layered periods	Layered
Amortization period	20 years
Amortization growth rate	2.5%
Asset valuation method	Actuarial value of assets with 5 years smoothing of gains and losses, subject to a 20% corridor around market value
Investment rate of return	7.5%
Inflation	2.5%
Compensation increases	2.5%, plus merit
Cost of living adjustments	1.0% per annum; 50% cap on initial benefit
Retirement age	Rates vary by age as shown in Appendix A of the January 1, 2016 Actuarial Valuation Report
Turnover	Select and ultimate rates based on age and service as shown in Appendix A of the January 1, 2016 Actuarial Valuation
Mortality rates	RP-2000 Combined Mortality projected to 2022 using Scale BB

COUNTY EMPLOYEES' RETIREMENT FUND

SCHEDULE OF ADMINISTRATIVE EXPENSES
For the Year Ended December 31, 2016

Personnel services	
Staff salaries	$ 1,186,627
Payroll taxes	86,362
Retirement	78,795
Insurance	204,485
Total personnel services	1,556,269
Professional services	
Actuarial	109,227
Audit	68,004
Legal counsel	182,182
Legislative consultant	67,000
Plan design and implementation consultants	210,460
Total professional services	636,873
Communication	
Printing	22,999
Postage	40,859
Telephone and internet	47,575
Total communication	111,433
Rentals	
Equipment leasing and maintenance	39,643
Total rentals	39,643
Depreciation	264,894
Miscellaneous	
Utilities	22,637
Board of directors expenses	17,385
Due diligence visits	4,384
Business risk insurance premiums	70,288
Staff development	19,897
Office	98,151
Property taxes	100
Total miscellaneous	232,842
Total administrative expenses	$ 2,841,954

COUNTY EMPLOYEES' RETIREMENT FUND

SCHEDULE OF INVESTMENT EXPENSES
For the Year Ended December 31, 2016

Investment management expenses	
Domestic stocks	$ 1,040,939
International stocks	449,435
Bonds	184,338
Private equity	231,435
Real estate	191,286
Total investment management expenses	2,097,433
Other investment expenses	
Investment consultants	216,241
Investment custodian	119,630
Bank depository	19,201
Total other investment expenses	355,072
Total investment expenses	$ 2,452,505
Securities lending expenses, net	
Borrower rebates	$ 203,101
Agent fees	49,444
Total securities lending expenses, net	$ 252,545

INVESTMENT SECTION

CERF

COUNTY EMPLOYEES' RETIREMENT FUND

July 20, 2017

Dear Board of Directors and CERF members:

CERF's investment portfolio for the fiscal year ended December 31, 2016, had a return of 5.57%. All of the plan's underlying asset class pools had positive returns, with the exception of global equity. The returns across the three major asset classes were dispersed, illustrating the impact on asset allocation to help reduce the volatility of annual returns while focusing on the long-term performance objectives.

CERF's US Large Cap Equity portfolio returned 7.36% compared to the equity benchmark of 11.96%. The US Small/Mid Cap Equity portfolio returned 10.64% compared to the benchmark of 17.59%, Non-US Equity returned 6.01% compared to the benchmark of 1.51%, Global Equity had a return of (3.3%) compared to the benchmark of 5.44%, and Private Equity returned 1.33% compared to the benchmark of 11.96%. Overall underperformance by the equity portolio for the year was mainly driven by poor stock selection in large cap growth and a new private equity fund.

CERF's Fixed Income portfolio returned 4.90%, compared to the fixed income benchmark of 2.65%. Outperformance for the year was mainly driven by security selection and high yield bonds.

CERF's Real Assets porfolio returned 8.38%, compared to the real assets benchmark of 7.73%. Outperformance for the year was mainly driven by appreciation in commerical real estate prices and rising rents.

The success of the investment program is defined by its adherence to the investment policy guidelines, and its performance compared to the stated return objectives and risk parameters.

The following chart shows the pension fund's annualized performance and risk since its inception compared to the stated objectives:

Total Pension Fund Peformance vs. Objectives
December 31, 1994 - December 31, 2016

Return Objectives	Benchmark	CERF
At a minimum, it is the objective of CERF to exceed its actuarial interest rate assumption on an ongoing basis.	7.5%	8.6%
The pension fund's annualized total return should equal or exceed the annualized rate of inflation as indicated by the Consumer Price Index by 5%	7.3%	8.6%
The pension fund's total return should exceed the total return of an index composed as follows: 65% S&P 500 Stock Index 35% Barclays Capital U.S. Aggregate Bond Index	8.5%	8.6%

2121 Schotthill Woods Drive ▪ Jefferson City, MO 65101
(573) 632-9203 ▪ Fax: (573) 761-4404

Total Pension Fund Peformance vs. Objectives
December 31, 1994 - December 31, 2016

Risk Objective	Benchmark	CERF
The pension fund's level of risk, as measured by Standard Deviation, should be consistent with the risk of an index composed as follows: 65% S&P 500 Stock Index 35% Barclays Capital U.S. Aggregate Bond Index	9.7%	9.6%

As reflected above, CERF is meeting or exceeding our performance objectives. The pension plan asset will continue to be managed with a long term focus, as it is expected that over shorter time periods, investment performance will remain volatile. CERF will also continue to manage investments with a belief that asset allocation remains the most significant driver of investment performance and the consistent execution of the investment process will have a significant influence on achieving the plan's objectives.

Respectfully submitted,

Richard R Anderson

Richard Anderson
Investment Officer

Kelly Schwartze

Kelly Schwartze, CPA
Assistant Deputy Director

Investment Objectives

CERF's investment program exists for the purpose of providing retirement income to the plan's participants. The pension plan's assets are invested in a manner that is consistent with its investment policy; a formal document that articulates the fund's goals, objectives, and risk parameters, and states the importance of diversification, risk management and a long-term, strategic investment time horizon.

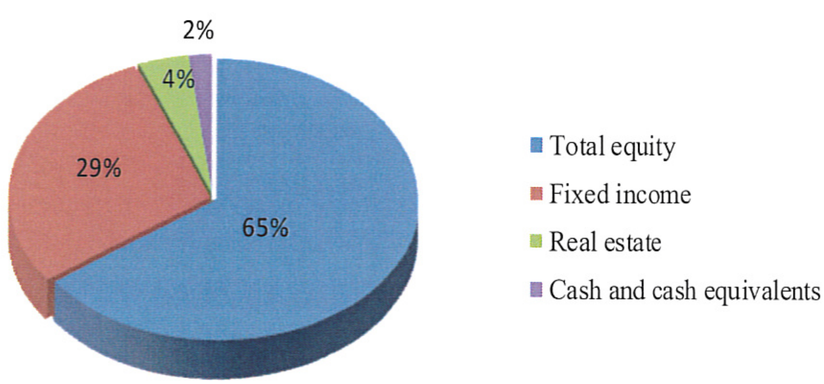
CERF's investment portfolio has exposures to each of the broad investment categories (stocks, bonds, and real estate), sub-asset classes (large cap stocks, small cap stocks, etc.) and geographic regions (U.S., non-U.S.). There are three major asset categories used – equity, fixed income, and real estate. CERF has established a target allocation for each of these categories, which includes a variance of up to 5%.

The following table summarizes the fair value of investments as of December 31, 2016, along with the target allocations as set forth in the investment policy:

Asset Class *	Fair Value	% of Total Fair Value	Target Allocation
Equity			
U.S. Large Cap equity	$ 116,279,185	26%	25%
U.S. Small/Mid Cap equity	53,618,606	12%	10%
Non-U.S. equity	63,867,125	15%	15%
Global equity	40,828,629	9%	10%
Private equity	13,537,091	3%	5%
Total equity	288,130,636	65%	65%
Fixed income	129,292,051	29%	30%
Real estate	19,631,664	4%	5%
Cash and cash equivalents	6,845,459	2%	0%
Total investments	$ 443,899,810	100%	100%

*Certain investments have been reclassified for investment management purposes. As such, classifications may not agree with the audited financial statements.

Asset Allocation - Asset Class



CERF's portfolio structure is regularly monitored by the investment consultant, CERF's internal staff, and its Board of Directors. The portfolio is rebalanced when appropriate to keep allocations to various investments within the stated ranges defined in the investment policy. New asset classes are periodically added to the mix to enhance diversification. Although long-term focused, the portfolio is adjusted as needed to take into consideration near-term risks and opportunities.

Equity Investments

CERF invests in different types of equities (stocks) for the growth opportunities they provide. CERF's portfolio currently has exposure to domestic stocks, international stocks, hedged equity funds, and private equity in different size categories (small, mid, and large capitalization), in different styles (value and growth), and with different investment management organizations.

Fixed Income Investments

CERF's fixed income (bond) portfolio is in place to enhance diversification and provide liquidity and downside protection. The fixed income portfolio is also diversified and invested across the fixed income markets, with an emphasis on high quality bonds. The portfolio has exposure to various quality, sector, geography, and security types.

Real Assets Investments

Real estate investments provide an additional layer of diversification to the portfolio, as they behave differently than stocks and bonds.

CERF's current allocation to real estate is achieved through a diversified real estate fund. The fund has exposure to different geographic locations and property types, while maintaining strict quality requirements for each property, including leverage limits and occupancy rates. The following investment results were prepared by CERF's consultant, and are gross of fees.

Investment Results
For the Year Ended December 31, 2016

		Annualized Rate of Return				Since	
Asset Class *	Fair Value	1 Year	3 Years	5 Years	10 Years	Inception Performance	Benchmark Performance **
Equity							
U.S. Large Cap equity	$ 116,279,185	7.36%	6.00%	13.56%	8.07%	7.78%	5.88%
U.S. Small/Mid Cap equity	53,618,606	10.64%	4.59%	13.39%	8.01%	7.86%	9.17%
Non-U.S. equity	63,867,125	6.01%	0.59%	7.30%	1.72%	8.77%	7.46%
Global equity	40,828,629	-3.30%	1.51%	5.80%	0.00%	2.69%	2.91%
Private equity	13,537,091	1.33%	5.31%	8.94%	0.00%	7.26%	13.74%
Fixed income	129,292,051	4.90%	1.83%	3.73%	5.44%	5.24%	4.34%
Real estate	19,631,664	8.38%	11.73%	11.56%	4.40%	5.58%	6.06%
Cash and cash equivalents	6,845,459	0.23%	0.15%	0.09%	0.95%	1.82%	1.86%
Total	$ 443,899,810	5.57%	3.56%	8.69%	5.88%	8.59%	8.50%

* Certain investments have been reclassified for investment management purposes. As such, classifications may not agree with the audited financial statements.

** Benchmarks for all accounts will vary according to mandate.

2016 Year in Review

2016 was a year of surprises. Financial market performance was shaped by unexpected changes in the global political landscape. The rising tide of global populism, increasing anti-trade sentiment, and unprecedented central bank monetary policy dominated the headlines. Behind the scenes, 2016 marked the seventh year of positive global economic growth. US markets outperformed non-US markets due to improving domestic economic activity and higher relative interest rates in the US. Although they lagged US markets, continued monetary support from global central banks helped the non-US markets deliver positive returns for the year.

In the US, both stocks and bonds advanced in 2016, driven by relatively low interest rates and a rebound in US corporate profits. The S&P 500 posted a record high in December as prices rose in anticipation of pro-growth policies promised by newly elected president Donald Trump. Mr. Trump's focus on domestic spending and jobs spurred a rally in US small cap stocks with a domestic focus. Small cap stocks surged 14% following the November 8 election, resulting in a 21% gain for 2016, and making them the top performing asset class for the year.

Global markets closed out the year slightly higher, pressured by the strong US dollar. Emerging market assets advanced, posting their biggest rise since 2012, as China's economy avoided a recession long feared by investors. Bonds eked out gains despite a rise in US Treasury yields and commodities advanced for the first time since 2010.

Largest Equity Holdings (Non-Commingled Funds)
December 31, 2016

	Security		Fair Value	Shares
1)	JPMorgan Chase & Co.	$	2,556,255	29,624
2)	Visa, Inc.		2,527,692	32,398
3)	Amazon.com, Inc.		2,473,071	3,298
4)	Starbucks Corp.		2,401,518	43,255
5)	Facebook, Inc.		2,385,332	20,733
6)	General Electric Company		2,344,467	74,192
7)	Comcast Corp.		2,339,207	33,877
8)	Textron Inc.		2,237,888	46,085
9)	Citigroup Inc.		2,234,568	37,600
10)	Costco Wholesale Group		2,206,796	13,783

Schedule of Advisor Fees
For the Year Ended December 31, 2016

Investment management expenses	
Domestic stocks	$ 1,040,939
International stocks	449,435
Bonds	184,338
Private equity	231,435
Real estate	191,286
Total investment management expenses	2,097,433
Other investment expenses	
Investment consultants	216,241
Investment custodian	119,630
Bank depository	19,201
Total other investment expenses	355,072
Total investment expenses	$ 2,452,505

Schedule of Brokerage Commissions
For the Year Ended December 31, 2016

Broker name	Shares	Commissions	Per Share
Century Capital	1,349,285	$ 46,917	$ 0.03
TCW	904,947	34,388	0.04
Blackrock I-Shares	1,353,334	20,563	0.02
Brown Advisory	536,656	13,415	0.02
William Blair	615,070	13,383	0.02
Burgundy Asset Management	398,453	8,433	0.02
Total commissions	3,808,460	$ 137,099	$ 0.12

ACTUARIAL SECTION

Milliman

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Actuary's Certification Letter

July 20, 2017

The Board of Trustees
County Employees' Retirement Fund
2121 Schotthill Woods Drive
Jefferson City, MO 65101

We conducted the annual actuarial valuation of the County Employees' Retirement Fund (CERF) as of January 1, 2016, for assessing plan funded status and calculating the actuarially determined contribution for the 2016 plan year. The major findings of the valuation are contained in an actuarial valuation report dated August 19, 2016.

In preparing that report, we relied, without audit, on information supplied by CERF and Williams Keepers, LLC. This information includes, but is not limited to, statutory provisions, member census 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.

Actuarial assumptions, including discount rates, mortality tables, and others identified in this report, and actuarial cost methods are prescribed by CERF's Board. These parties are responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in the Actuarial Basis of this report. The System is solely responsible for communicating to Milliman any changes required thereto.

The valuation report is only an estimate of the Systems' financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System 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.

Milliman

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. The calculations in the valuation report have been made on a basis consistent with our understanding of the System's funding requirements and goals.

Milliman's work is prepared solely for the use and benefit of the County Employees' Retirement Fund ("System"). No third party 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.

In addition to the annual actuarial valuation report, a separate report is issued to provide financial reporting information in accordance with Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68.

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.

Michael Zwiener, FSA, EA
Consulting Actuary

William D. Winningham, EA
Consulting Actuary

MJZ/WDW/giy

The defined benefit pension actuarial information presented in this *2016 Comprehensive Annual Financial Report* (CAFR) is based on CERF's most current actuarial valuation data as of December 31, 2016. The Financial Section of the CAFR presents additional actuarial valuation information on a financial reporting basis, or accounting basis, as required by GASB 67. This section presents actuarial valuation information on a funding basis, and has been updated to reflect pension funding results as of December 31, 2016. The actuarial assumptions in this section are applicable to 2016, unless otherwise noted.

Summary of Actuarial Methods and Assumptions

Actuarial cost method: Entry age cost method. Entry age is the age of the members' hire date. Normal cost and accrued liability are calculated on an individual basis and are based on costs allocated as a level percent of compensation, as if the current benefit formulas have always been in effect.

Amortization method: Layered, level percent of payroll. The Unfunded Actuarial Liability (UAL) is amortized as a level percentage of projected payroll in an effort to maintain level contribution rates as a percentage of payroll during the specified amortization period if future experience follows the assumption.

New UAL arises each year when each new actuarial valuation is published. The newly arising UAL can be either positive or negative, and can be due either to experience varying from assumption or to changes in actuarial liability from modifications to assumptions, plan provisions or actuarial methods. Each year's newly arising UAL is currently amortized over a closed 20-year period as a level percent of the projected payroll.

Amortization period: 20 years

Amortization growth rate: 2.5%

Asset valuation method: To the extent actual investment performance differs from the assumed rate of return, such differences are taken into account systematically as follows:

> The actuarial value of assets was determined using the expected return method. Under this method, the gain or loss for a year is the difference between the expected value of assets for the year and the market value. The expected value is the market value brought forward one year at the assumed rate of return with appropriate adjustments for contributions and disbursements. The actuarial value of assets is equal to the market value of assets, with the gains and losses deferred as follows:
>
> i. 80% of the prior year gain/loss
> ii. 60% of the second preceding year's gain/loss
> iii. 40% of the third preceding year's gain/loss
> iv. 20% of the fourth preceding year's gain/loss
>
> To ensure that the actuarial value of assets remains reasonably close to the market value of assets, the asset method includes a corridor whereby the actuarial value of assets must remain within 80% to 120% of the market value of assets.

Actuarial assumptions:

Investment rate of return:	7.5%, net of investment expenses
Inflation:	2.5%
Compensation increases:	2.5%, plus merit
Cost of living adjustments:	1.0% per annum, 50% cap on initial benefit
Mortality rates:	RP-2000 combined mortality projected to 2022 using scale BB
Retirement age:	Rates vary by age as shown below

Retirement Age	Rate
< 55	0.00
55	0.05
56	0.05
57	0.05
58	0.05
59	0.05
60	0.10
61	0.15
62	0.25
63	0.18
64	0.18
65	0.25
66	0.15
67	0.15
68	0.15
69	0.15
70	1.00

Turnover: Select and ultimate rates based on age and service as shown below

Select rate during the first 4 years of employment:

Years of Service	Non-LAGERS	LAGERS
0	0.30	0.30
1	0.25	0.25
2	0.20	0.20
3	0.18	0.15
4	0.15	0.12

Ultimate rate for members with more than 4 years of service:

Withdrawal
Males and Females
LAGERS

Age	5-7 Yrs	8+ Yrs	Age	5-7 Yrs	8+ Yrs	Age	5-7 Yrs	8+ Yrs	Age	5-7 Yrs	8+ Yrs
<=19	0.00	0.00	32	0.13	0.09	45	0.07	0.06	58	0.08	0.06
20	0.23	0.16	33	0.12	0.09	46	0.07	0.05	59	0.08	0.06
21	0.22	0.15	34	0.11	0.08	47	0.07	0.05	60	0.08	0.07
22	0.21	0.15	35	0.11	0.08	48	0.07	0.05	61	0.08	0.07
23	0.20	0.14	36	0.10	0.08	49	0.07	0.05	62	0.09	0.07
24	0.19	0.13	37	0.10	0.07	50	0.07	0.05	63	0.09	0.08
25	0.18	0.13	38	0.09	0.07	51	0.07	0.05	64	0.10	0.08
26	0.17	0.12	39	0.09	0.07	52	0.07	0.05	65	0.10	0.08
27	0.16	0.12	40	0.09	0.06	53	0.07	0.05	66	0.11	0.09
28	0.16	0.11	41	0.08	0.06	54	0.07	0.06	67	0.11	0.09
29	0.15	0.11	42	0.08	0.06	55	0.07	0.06	68	0.12	0.09
30	0.14	0.10	43	0.08	0.06	56	0.07	0.06	69	0.13	0.10
31	0.13	0.10	44	0.07	0.06	57	0.07	0.06	>= 70	0.13	0.10

Withdrawal
Males and Females
Non-LAGERS

Age	5-7 Yrs	8+ Yrs	Age	5-7 Yrs	8+ Yrs	Age	5-7 Yrs	8+ Yrs	Age	5-7 Yrs	8+ Yrs
<=19	0.00	0.00	32	0.16	0.11	45	0.10	0.07	58	0.08	0.07
20	0.25	0.19	33	0.15	0.10	46	0.10	0.06	59	0.08	0.07
21	0.24	0.18	34	0.14	0.10	47	0.09	0.06	60	0.08	0.07
22	0.23	0.17	35	0.14	0.10	48	0.09	0.06	61	0.09	0.07
23	0.22	0.16	36	0.13	0.09	49	0.09	0.06	62	0.09	0.08
24	0.21	0.16	37	0.13	0.09	50	0.09	0.06	63	0.09	0.08
25	0.21	0.15	38	0.12	0.08	51	0.09	0.06	64	0.09	0.08
26	0.20	0.14	39	0.12	0.08	52	0.08	0.06	65	0.09	0.09
27	0.19	0.14	40	0.12	0.08	53	0.08	0.06	66	0.10	0.09
28	0.18	0.13	41	0.11	0.07	54	0.08	0.06	67	0.10	0.10
29	0.18	0.13	42	0.11	0.07	55	0.08	0.06	68	0.10	0.10
30	0.17	0.12	43	0.10	0.07	56	0.08	0.07	69	0.10	0.10
31	0.16	0.11	44	0.10	0.07	57	0.08	0.07	>= 70	0.11	0.11

Retirees and Beneficiaries Added and Removed

	Number of Retired Members and Beneficiaries		Annual Benefit of Retired Members and Beneficiaries					
Fiscal Year	Added During the Year	Removed During the Year	Added During the Year	Removed During the Year	Total Number of Retired Members and Beneficiaries	Total Annual Benefit	Percentage Increase in Total Annual Benefits	Average Annual Benefit
2016	410	74	$ 2,750,034	$ 515,928	4,735	$ 28,175,645	6.48%	$ 5,951
2015	425	73	3,455,780	395,322	4,519	26,460,002	10.48%	5,855
2014	299	68	2,053,919	380,652	4,303	23,950,417	8.57%	5,566
2013	418	82	3,011,986	429,204	3,478	22,059,430	10.04%	6,343
2012	299	62	1,986,529	324,348	3,247	20,047,115	8.31%	6,174
2011	369	63	2,918,294	312,120	2,936	18,508,288	15.40%	6,304
2010	265	47	1,799,683	231,048	2,737	16,038,186	9.17%	5,860
2009	359	50	2,311,067	290,004	2,410	14,691,234	13.53%	6,096
2008	218	58	1,394,342	296,364	2,240	12,939,909	9.36%	5,777
2007	286	27	1,834,338	157,296	2,085	11,832,652	13.74%	5,675

Employer Schedule of Funding Progress

CERF uses the entry-age normal funding method. The entry-age normal actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's pensionable compensation between the entry age of the member and assumed exit ages.

Schedule of Funding Progress
Last 10 Fiscal Years

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL) Entry Age	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
6/30/2007	$ 254,803,856	$ 308,563,489	53,759,633	82.6%	$ 320,317,003	16.8%
6/30/2008 *	271,146,789	364,213,668	93,066,879	74.4%	335,961,755	27.7%
6/30/2009	270,397,854	396,537,305	126,139,451	68.2%	352,719,824	35.8%
6/30/2010	294,482,927	423,561,319	129,078,392	69.5%	361,334,336	35.7%
6/30/2011	318,320,084	452,366,458	134,046,374	70.4%	353,991,192	37.9%
6/30/2012	331,189,281	482,565,132	151,375,851	68.6%	357,441,466	42.3%
6/30/2013	360,289,802	511,278,478	150,988,676	70.5%	361,898,865	41.7%
12/31/2014	422,283,987	593,982,414	171,698,427	71.1%	372,165,232	46.1%
12/31/2015 **	448,784,038	640,399,679	191,615,641	70.1%	391,801,920	48.9%
12/31/2016	477,065,373	672,625,878	195,560,505	70.9%	401,037,836	48.8%

** Benefit improvements and new assumptions adopted*
*** New assumptions and/or methods adopted*

Financial Experience

Actual experience will never coincide exactly with assumed experience (except by coincidence). Gains and losses may offset each other over a period of years, but sizeable year-to-year variations from assumed experience are common. Detail on the analysis of the financial experience gain (loss) is shown below.

Short-Term Solvency Test

		Actuarial Accrued Liability for:							
Actuarial Valuation Date		Member Contributions (1)	Retirees and Beneficiaries (2)	Active and Inactive Members (3)	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Net Assets for: (1)	(2)	(3)	Total
6/30/2007		$ -	$ 102,952,773	$ 205,610,716	$ 254,803,856	100%	100%	73.9%	82.6%
6/30/2008	*	-	115,424,360	248,789,308	271,146,789	100%	100%	62.6%	74.4%
6/30/2009		-	127,191,071	269,346,234	270,397,854	100%	100%	53.2%	68.2%
6/30/2010		-	144,396,614	279,164,705	294,482,927	100%	100%	53.8%	69.5%
6/30/2011		-	152,989,362	299,377,096	318,320,084	100%	100%	55.2%	70.4%
6/30/2012		-	175,934,134	306,630,998	331,189,281	100%	100%	50.6%	68.6%
6/30/2013		-	188,843,433	322,435,045	360,289,802	100%	100%	53.2%	70.5%
12/31/2014		-	221,786,947	372,195,467	422,283,987	100%	100%	53.9%	71.1%
12/31/2015	*	-	255,947,474	384,452,205	448,784,038	100%	100%	50.2%	70.1%
12/31/2016		-	270,475,166	402,150,712	477,065,373	100%	100%	51.4%	70.9%

** New assumptions and/or methods adopted*

Summary of Plan Provisions

Summarized below are the major provisions of CERF, as established by Sections 50.1000-50.1300 of the Missouri Revised Statutes (RSMo).

Eligibility

CERF is a mandatory cost-sharing multiple employer retirement system for each county in the state of Missouri, except any city not within a county (which excludes the City of St. Louis) and counties of the first classification with a charter form of government, other than any county adopting a charter form of government after January 1, 2008. CERF covers county elective or appointive officers or employees whose position requires the actual performance of duties not less than 1,000 hours per year; including employees of circuit courts located in a first class, non-charter county which is not participating in the Local Government Employees Retirement System (LAGERS); and does not cover circuit clerks, deputy circuit clerks, county prosecuting attorneys, and county sheriffs. Until January 1, 2000, employees hired before January 1, 2000 could opt out of the system.

Contributions

Member contributions are required, the amount of which is based on the member's most recent date of hire as well as if the member is also participating in LAGERS. The amount of the required member contribution is summarized in the table below:

	Percent of Compensation	
Most Recent Date of Hire	Non-LAGERS	LAGERS
Before February 25, 2002	2.0%	0.0%
On or After February 25, 2002	6.0%	4.0%

Employer contributions are a combination of taxes, fees, and penalties as provided by Statute 50.1020. In addition, some counties have elected to contribute a portion of or all of the required member contribution up to 4% for employees hired on or after February 25, 2002, in lieu of payroll deductions. Nearly all of the funding for CERF comes from county receipts in the form of contributions, fees and penalties.

Vesting

A participant is vested after eight years of continuous creditable service during which pay is earned and received for at least 1,000 hours in each of those eight years.

Prior Service

Employees who were employed on June 10, 1999, and remained employed through January 1, 2000, do not have to purchase prior service. Members who terminated vested or retired prior to January 1, 2000, must purchase any service accrued prior to August 28, 1994, in order to include that service in their retirement benefit.

Average Final Compensation

Average final compensation represents the average of the two highest years of compensation from the county. Lump sum payments for unused sick leave, unused vacation, and other types of back pay attributed to prior years of employment are excluded from the calculation of average final compensation.

Early Retirement

Members have the option of retiring as early as age 55 (with eight years of continuous creditable service) and receiving an actuarially-reduced benefit. To be eligible for early retirement, a participant must terminate employment on or after January 1, 2000, and meet other eligibility requirements.

Normal Retirement Eligibility

Participants are eligible to retire at age 62 with eight years of credited service.

The Normal Retirement Benefit is the greater of A, B, and C below:

- A) Frozen Minimum Benefit as of 12/31/1999
- B) Flat $29 per month times years of Credited Service (maximum of 29 years)
- C) Replacement Ratio Formula (i + ii as defined below)
  - i) Average Final Compensation times the replacement ratio from the table below minus the age 62 Social Security Primary Insurance Amount. The result is then multiplied by service (up to 25 years) and divided by 25.
  - ii) Average Final Compensation times 1% times service in excess of 25 years but no more than 29 years.

Average Final Compensation	**Replacement Ratio**
$36,000 or less	80%
$36,000.01 - $48,000	77%
Over $48,000	72%

Survivor Benefits

Active employees: If a participant dies while actively employed, his or her named beneficiary will receive a lump-sum death benefit of $10,000.

Non-vested members: Senate Bill 625, effective August 28, 2012, allows a refund of contributions to the beneficiary(ies) of active members who die after December 31, 2002, and before becoming vested.

Married, vested members: If a vested participant dies before his or her pension begins, his or her surviving spouse can apply for a 50% spousal pension benefit.

Single, vested members: House Bill 795, effective August 28, 2004, allows a refund of contributions to the beneficiary(ies) of a single, vested member who dies on or after August 28, 2004.

Retired members: Depending on which option the member chooses, the designated survivor will receive the appropriate amount of benefits under the survivor option selected on his or her benefit calculation. Members who terminated employment or retired on or after January 1, 2000, have the option to designate someone other than a spouse as the beneficiary of their retirement annuity.

STATISTICAL SECTION

Statistical Summary

The objectives of the statistical section are to provide additional historical perspective, context, and relevant details to assist readers in using information in the financial statements, notes to the financial statements, and required supplementary information in order to understand and assess CERF's overall financial condition. All non-accounting data in this section was derived from internal sources and the annual actuarial valuation reports.

The schedules and graphs beginning on page 49 show financial trend information about the change in CERF's financial position for the past 10 years. The financial trend schedules presented are:

- Change in Fiduciary Net Position
- County Fee Receipts
- Schedule of Contributions
- Benefits Paid
- Comparison of Actuarial Assets and Total Actuarial Liabilities

The schedules and graphs beginning on page 54 show demographic and economic information of CERF's membership. This data includes the number of members, average compensation, average age, and average monthly benefits.

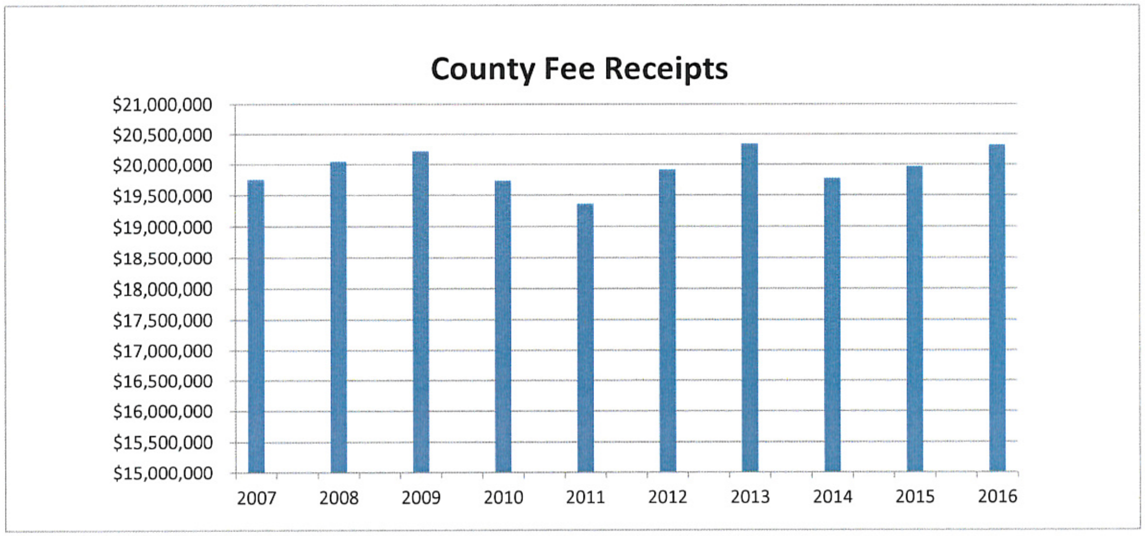
The map on page 56 reflects the 2016 payments made to retirees and beneficiaries by county.

County Employees' Retirement Fund
Statements of Changes in Fiduciary Net Position
Last Ten Fiscal Years

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Additions:										
County receipts	$ 19,760,207	$ 20,053,257	$ 20,224,734	$ 19,739,918	$ 19,364,023	$ 19,919,125	$ 20,348,888	$ 19,781,514	$ 19,968,537	$ 20,329,625
Member contributions	6,860,679	7,717,143	8,335,338	8,405,810	8,929,581	9,412,122	10,034,205	10,599,321	11,519,437	11,588,772
Member contributions, paid by counties	694,056	739,270	783,752	1,078,475	1,032,000	1,150,772	1,063,647	1,235,779	1,517,407	2,142,332
Other contributions and income	82,737	122,026	215,867	79,666	86,155	88,926	104,316	70,024	83,849	73,942
Net investment income (loss)	14,715,195	(61,684,493)	47,842,927	36,938,011	(1,593,844)	40,515,139	67,381,460	17,958,335	94,626	21,566,708
Total additions	42,112,874	(33,052,797)	77,402,618	66,241,880	27,817,915	71,086,084	98,932,516	49,644,973	33,183,856	55,701,379
Deductions:										
Retirement benefits	12,122,669	13,179,658	14,999,256	16,246,166	18,825,068	20,273,110	22,368,902	24,242,805	26,758,453	28,423,305
Refunds of member contributions	2,233,588	2,228,126	2,545,500	2,616,254	3,316,811	3,185,425	3,658,100	3,169,101	3,142,804	3,037,078
Defined contribution plan matching contribution	1,626,581	1,946,293	2,005,611	2,126,632	2,224,641	2,472,044	2,531,548	2,696,164	2,861,751	3,133,484
Administrative expense	1,938,959	1,984,566	1,919,044	1,841,979	1,917,436	1,964,117	2,089,424	2,130,636	2,522,685	2,841,954
Total deductions	17,921,797	19,338,643	21,469,411	22,831,031	26,283,956	27,894,696	30,647,974	32,238,706	35,285,693	37,435,821
Change in fiduciary net position	$ 24,191,077	$ (52,391,440)	$ 55,933,207	$ 43,410,849	$ 1,533,959	$ 43,191,388	$ 68,284,542	$ 17,406,267	$ (2,101,837)	$ 18,265,558

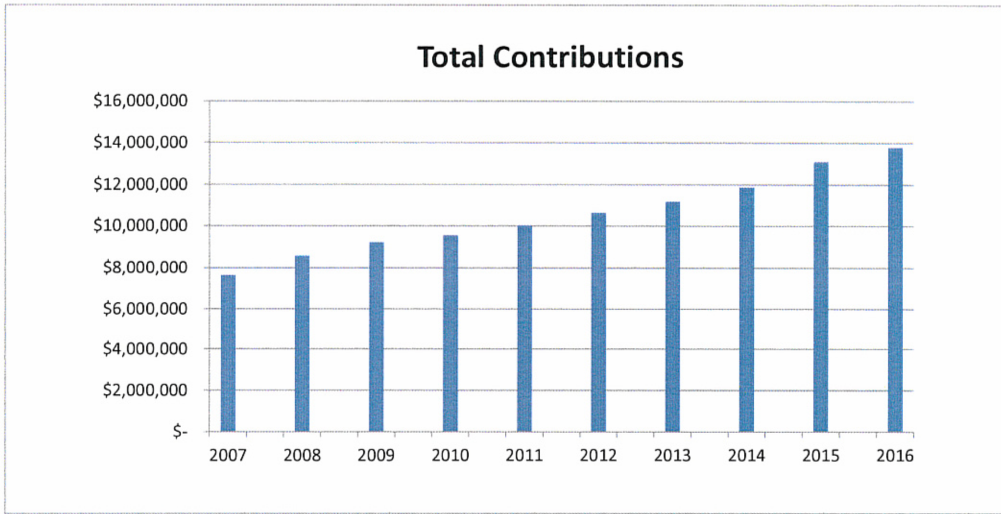
County Employees' Retirement Fund
County Fee Receipts
Last Ten Fiscal Years

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Delinquent property tax fees	$ 7,172,316	$ 7,901,298	$ 8,171,265	$ 8,202,492	$ 8,039,013	$ 7,798,546	$ 8,056,301	$ 8,055,102	$ 7,916,205	$ 7,792,473
Assessor late assesment filing fees	4,745,678	5,223,429	5,264,998	5,234,220	5,230,653	5,500,327	5,762,731	5,874,232	6,066,688	6,472,823
Recorder document fees	6,485,465	5,590,389	5,560,869	5,120,560	4,898,134	5,478,788	5,376,260	4,657,422	4,857,464	4,955,962
Merchants licenses fees	1,183,115	1,227,843	1,168,839	1,123,795	1,142,799	1,086,122	1,093,740	1,133,720	1,069,838	1,046,869
Interest on above fees	173,633	110,298	58,763	58,851	53,424	55,342	59,856	61,038	58,342	61,498
Total	$ 19,760,207	$ 20,053,257	$ 20,224,734	$ 19,739,918	$ 19,364,023	$ 19,919,125	$ 20,348,888	$ 19,781,514	$ 19,968,537	$ 20,329,625



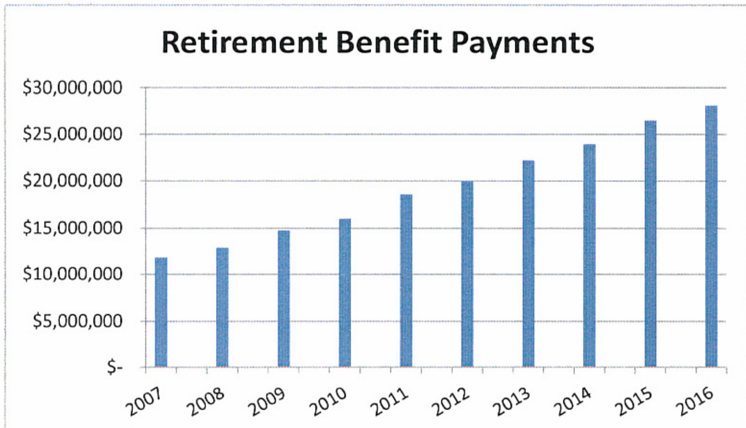
County Employees' Retirement Fund
Schedule of Contributions
Last Ten Fiscal Years

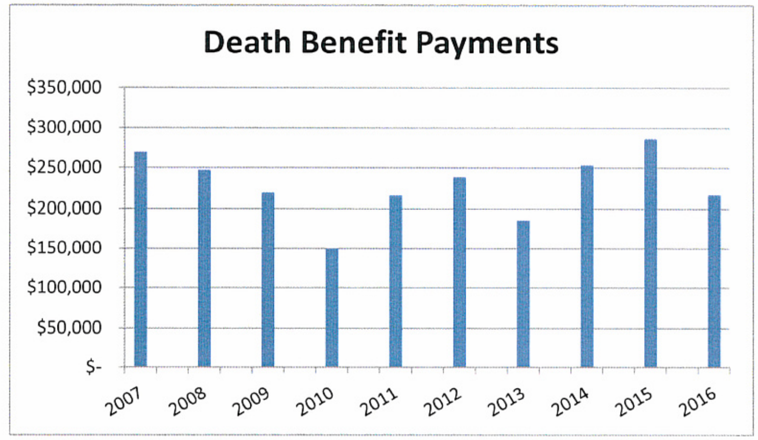
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Member contributions	$ 6,860,679	$ 7,717,143	$ 8,335,338	$ 8,405,810	$ 8,929,581	$ 9,412,122	$ 10,034,205	$ 10,599,321	$ 11,519,437	$ 11,588,772
Member contributions, paid by counties	694,056	739,270	783,752	1,078,475	1,032,000	1,150,772	1,063,647	1,235,779	1,517,407	2,142,332
Member contributions, purchase of prior service	82,737	122,026	92,669	75,165	81,043	85,145	100,398	64,832	78,904	68,655
	$ 7,637,472	$ 8,578,439	$ 9,211,759	$ 9,559,450	$ 10,042,624	$ 10,648,039	$ 11,198,250	$ 11,899,932	$ 13,115,748	$ 13,799,759



County Employees' Retirement Fund
Benefits Paid
Last Ten Fiscal Years

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Retirement benefits, gross	$ 11,852,669	$ 12,939,658	$ 14,779,256	$ 16,096,166	$ 18,615,068	$ 20,047,118	$ 22,204,894	$ 24,012,805	$ 26,520,454	$ 28,213,305
Death benefits, gross *	$ 270,000	$ 247,570	$ 220,000	$ 150,000	$ 216,616	$ 239,418	$ 186,037	$ 253,636	$ 287,131	$ 217,404
Total	$ 12,122,669	$ 13,187,228	$ 14,999,256	$ 16,246,166	$ 18,831,684	$ 20,286,536	$ 22,390,931	$ 24,266,441	$ 26,807,585	$ 28,430,709

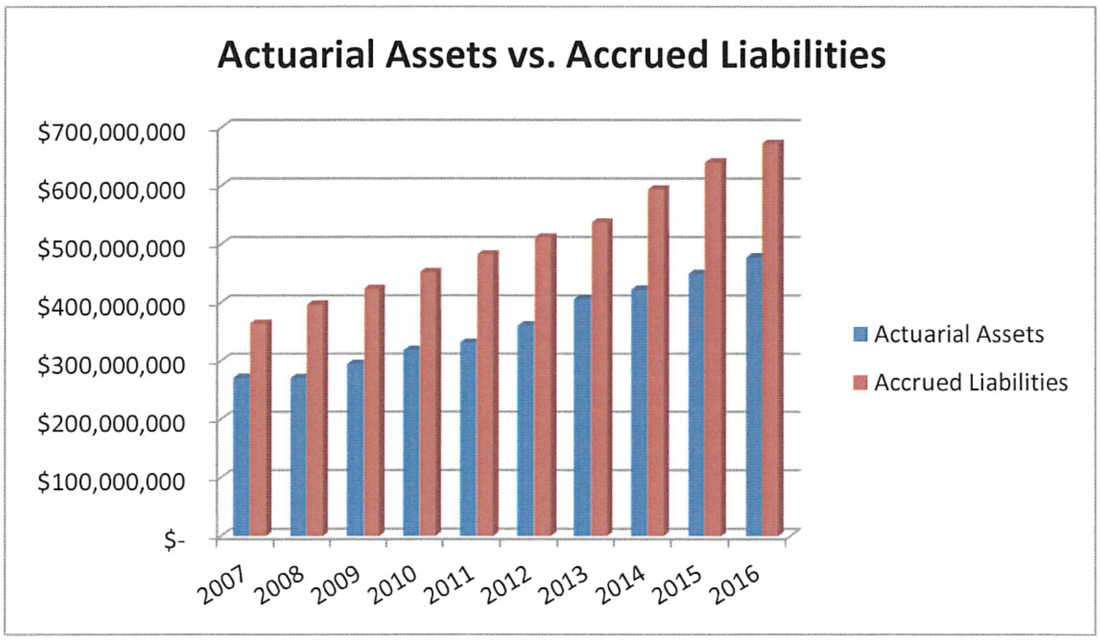




* Death benefits include single vested death benefits, which are recorded as refunds of member contributions on the Statements of Changes in Fiduciary Net Position.

County Employees' Retirement Fund
Comparison of Actuarial Assets and Total Actuarial Liabilities
Last Ten Fiscal Years

Fiscal Year	Actuarial Assets	Unfunded Liabilities	Accrued Liabilities	Funded Ratios
2007	$ 271,146,789	$ 93,066,879	$ 364,213,668	74.4%
2008	270,397,854	126,139,451	396,537,305	68.2%
2009	294,482,927	129,078,392	423,561,319	69.5%
2010	318,320,084	134,046,374	452,366,458	70.4%
2011	331,189,281	151,375,851	482,565,132	68.6%
2012	360,289,802	150,988,676	511,278,478	70.5%
2013	406,209,618	131,165,166	537,374,784	75.6%
2014	422,283,987	171,698,427	593,982,414	71.1%
2015	448,784,038	191,615,641	640,399,679	70.1%
2016	477,065,373	195,560,505	672,625,878	70.9%



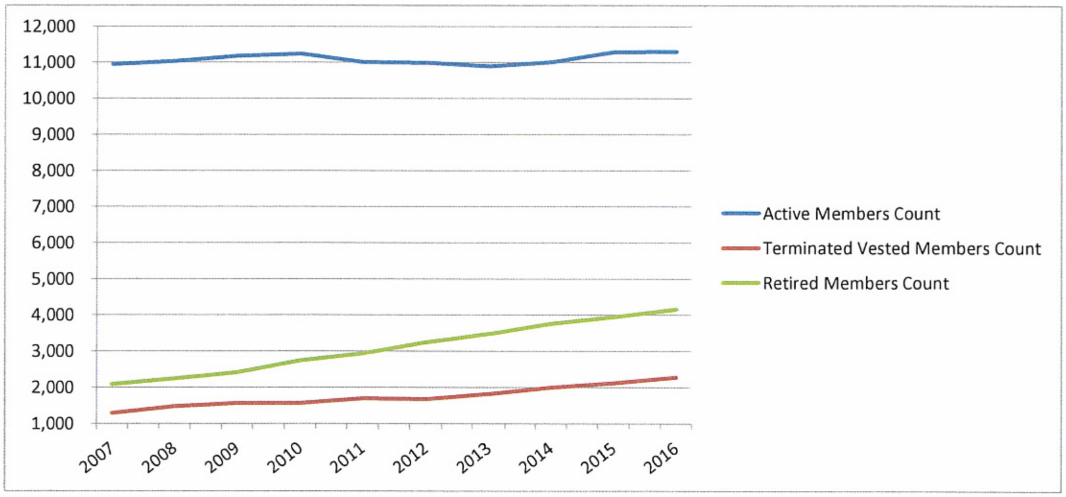
County Employees' Retirement Fund
Member Data
Last Ten Fiscal Years

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Active Members										
Count	10,946	11,037	11,173	11,237	11,010	10,987	10,891	11,010	11,291	11,303
Average Compensation	$28,988	$29,971	$31,091	$31,690	$31,739	$32,048	$32,873	$33,802	$34,700	$35,481
Average Age	44.6	44.8	44.7	45.1	45.2	45.4	45.6	45.3	45.3	45.2
Average Service	7.9	8.0	8.2	8.5	8.8	8.9	9.1	9.1	8.7	8.7
Terminated Vested Members										
Count	1,289	1,469	1,564	1,557	1,696	1,672	1,815	1,991	2,115	2,280
Average Age	48.9	49.1	50.1	49.3	50.2	50.2	50.3	49.8	49.2	50.1
Average Monthly Benefits	$353	$365	$409	$404	$444	$444	$460	$499	$446	$475
Retired Members										
Count	2,085	2,240	2,410	2,737	2,936	3,247	3,478	3,761	3,951	4,163
Average Age	70.0	70.1	70.0	70.0	70.1	70.2	70.3	71.0	71.2	71.4
Average Monthly Benefits	$407	$428	$433	$437	$448	$470	$475	$511	$532	$533
Beneficiaries										
Count	***	***	***	***	***	***	***	542	568	611
Average Age	***	***	***	***	***	***	***	69.8	71.2	71.5
Average Monthly Benefits	***	***	***	***	***	***	***	$264	$287	$298

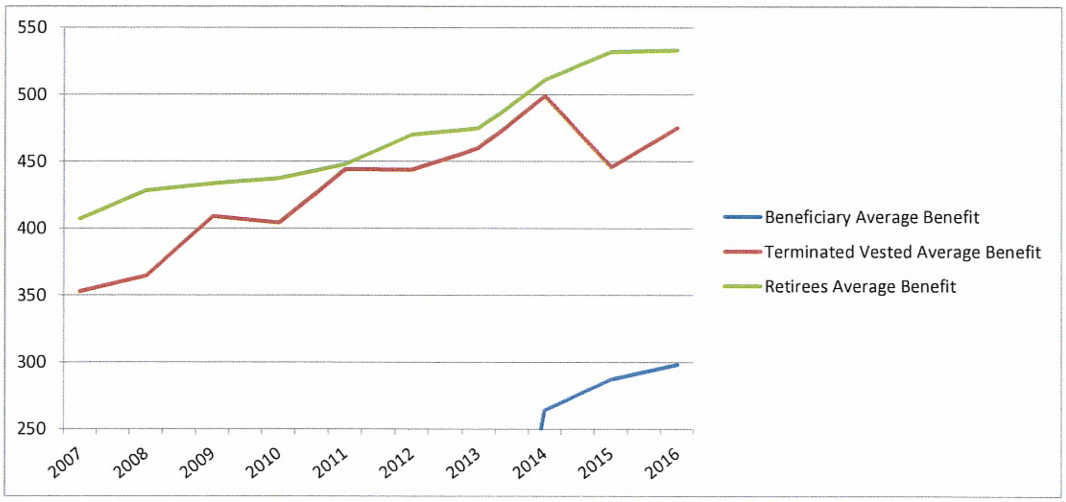
***: Until the January 1, 2015 valuations, beneficiary information is included within the retired members section.

Source: Annual actuarial valuations

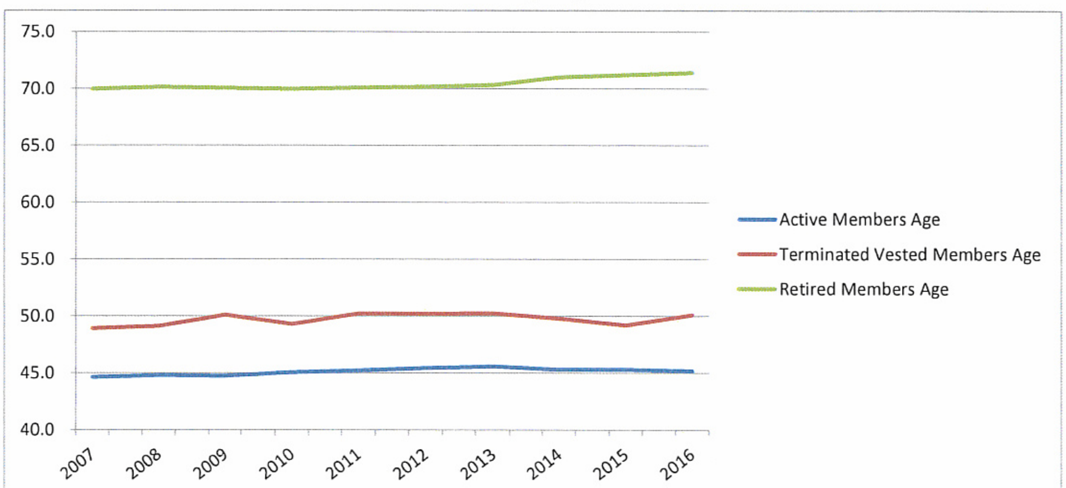
Growth in Membership



Average Monthly Benefit



Average Age



CERF
2016 Retiree and Beneficiary Payouts by County