# CITY OF TUCSON, ARIZONA

# TUCSON SUPPLEMENTAL RETIREMENT SYSTEM

A Component of the City of Tucson

## COMPREHENSIVE ANNUAL FINANCIAL REPORT

FISCAL YEAR JULY 1, 2015 - JUNE 30, 2016

# TUCSON SUPPLEMENTAL RETIREMENT SYSTEM
# (A Component Unit of the City of Tucson, Arizona)

## Comprehensive Annual Financial Report
## For Fiscal Year Ended
## JUNE 30, 2016

**Issued by the City of Tucson, Finance Department, Retirement Division**

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Government Finance Officers Association

# Certificate of Achievement for Excellence in Financial Reporting

Presented to

**Tucson Supplemental Retirement System**

**Arizona**

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

**June 30, 2015**

Jeffrey R. Emer

Executive Director/CEO

CITY OF TUCSON

December 30, 2016

To the Chairman and Members of the Retirement Board,
Tucson Supplemental Retirement System

The Comprehensive Annual Financial Report (CAFR) of the Tucson Supplemental Retirement System ("TSRS" or the "System") for the year ended June 30, 2016, is herewith submitted. Responsibility for both the accuracy of the data and the completeness and fairness of the presentation rests with the management of TSRS. A narrative introduction to financial statement highlights, overview and analysis for fiscal year 2016 can be found in the Management's Discussion and Analysis beginning on page 3 of the Financial Section.

The Tucson Supplemental Retirement System was established in 1953 to provide a monthly retirement supplement to social security benefits and to the personal retirement savings of its members. The benefits provided to members are supported by payroll contributions made by active members, City contributions and investment returns from the retirement system asset portfolio.

For the third consecutive year, the System's funded status improved, rising from 69.2% to 71.1% for the year ended June 30, 2016. The latest increase is primarily due to asset gains on the smoothed or actuarial value of assets, as well as liability gains due to salary increases coming in less than expected.

The TSRS Board of Trustees (the "Board") has recommended changes during the past several years specifically aimed at improving the financial sustainability of the System. In 2006, the Board initiated variable contribution rates for employees hired after June 30, 2006. In 2011, the Board implemented a reduced cost Tier II plan design for all new employees hired after June 30, 2011. In 2013, the Board adopted a funding policy that changed the amortization period from 15 to 20 years. In 2014, the Board added a rounding policy designed to pay-off the unfunded liability sooner, and reduced the assumed investment rate of return from 7.75% to 7.25%.

Record keeping is the responsibility of the Human Resource Department, Employee Benefits and Retirement Section. Preparation of financial statements and control over investment responsibilities for TSRS are performed by the Accounting and Treasury Divisions of the City's Finance Department. TSRS uses the accrual basis of accounting. This CAFR was prepared in conformance with principles of governmental accounting and reporting set forth by the Governmental Accounting Standards Board (GASB). Internal control is the responsibility of management, with an objective that they are responsible for an accounting of their stewardship of the resources entrusted to their care. Internal accounting controls provide reasonable, but not absolute, assurance that the financial statements are free of any material misstatements because the cost of a control should not exceed the benefits to be derived, the objective is to provide reasonable, rather than absolute assurance the financial statements are free of any material misstatement.

Annually, the budget for the System must be approved by the Board. The budget is also included in the City of Tucson annual budget which is recommended by the City Manager for adoption by the Mayor and Council.

Provisions of the Tucson City Code require unanimous approval of all System expenses by the Board. Quarterly, the Board reviews the financial report and expenses listing and ratifies all expenses.

Contributions to the System are based on principles of level-cost financing with current service financed as a level percent of payroll on a current basis and prior service amortized as a level percent of payroll over a fixed period of twenty years beginning July 1, 2014.

## Funding Status

Analysis of the funding progress for TSRS measures the net assets available for benefits against the actuarial accrued liability, in order to arrive at the System's percent funded ratio. As of June 30, 2016, the System's funded ratio increased from 69.2% to a 71.1% funded level on an actuarial basis. On a market basis, the System's funded ratio slightly decreased from 72.4% to 70.6%. The actuarial accrued liability increased from $1,021,377,564 to $1,030,694,946, an increase of .91%. The actuarial value of assets allocated to funding and available for benefits increased by 3.7%, from $706,773,630 to $732,926,710. The unfunded actuarial accrued liability decreased by $16,835,698, or 5.4% in the current year. The System experienced an asset gain of $5.5 million during fiscal year 2016. Although the market value of assets returned less than 7.25% during the year, there were deferred gains in the actuarial value of assets as of June 30, 2015 which were partially recognized in the June 30, 2016 valuation, creating the observed gain. The changes in accrued actuarial liability are primarily due to salary increases less than expected.

## Investment Activities

Net investment income amounted to $18,074,097. The net investment income or loss is comprised of bond interest, dividend income, real estate income, security lending income, investment expenses and realized and unrealized gains and losses on securities. The rate of return, on a money-weighted basis, for the total fund for the year was 2.38% (gross of fees). For the last three and five years, the System had annualized returns of 8.13% and 8.01%, respectively.

TSRS asset allocation targets are 34% U.S. equities, 25% foreign equities, 9% real estate, 27% fixed income and 5% infrastructure. These percentages reflect the current diversification posture as of June 30, 2016 and represent the Board's prudent judgment in the pursuit of maximum returns at acceptable levels of risk.

In accordance with current investment policy, the System's asset classes were rebalanced throughout the fiscal year. Due to ongoing liquidity requirements needed to pay retiree pensions, $29.0 million was moved out of various asset classes, in monthly increments, to the City's investment pool account. This amount was utilized throughout the fiscal year to make up the shortfall between pension contributions and distributions. This movement of funds had a "self-balancing" effect between equities, fixed income, real estate and infrastructure which helped to keep those asset classes within their current target allocation percentage ranges.

## Major Initiatives

Every five years the System's investment consultant and actuary complete an asset/liability and experience study. These were both completed during the fiscal year ended June 30, 2014, based on data from the June 30, 2013 plan year end. As a result of these studies, a significant reallocation of assets were recommended by the investment consultant and approved in principle by the Board. The new investment policy was approved and implemented during the plan year ended June 30, 2016. This resulted in a reduction of target allocations to U.S. equities by 12% and increase target allocations to international equities, fixed income and real estate by 10%, 1% and 1%, respectively. The increase in the allocation to international equities resulted in an additional allocation to international small-cap equities. American Century Investments was retained by the Board to manage this strategy.

Similar to previous years, tight budgets continue to be the norm, restricting the number of employees hired since 2008, thereby reducing the number of employees hired to replace those from attrition. The City offered retirement incentives during fiscal year 2016 as part of the budget development process for fiscal year 2017. As a result of the incentive, there were a total of 188 retirements this fiscal year as opposed to 101 in the prior year.

## Professional Services

The Retirement Board retains money managers and other professionals to prudently discharge its fiduciary responsibility for the proper administration of the System. Opinions of the independent auditors and the actuary are included in this report. The professionals retained by the Board are listed on page vii of this report.

## Acknowledgments

This report is intended to provide information as a means for making management decisions, complying with statutory provisions, and demonstrating responsible stewardship for assets of the System. The preparation of this report reflects the combined efforts of TSRS staff, the City of Tucson Finance Department, and others that have worked diligently to assure the successful operation of TSRS. Special words of appreciation are due to: Karen Tenace, Deputy Finance Director, Bob Szelewski, Lead Pension Analyst, Dawn Davis, Management Analyst, Ginny Rath-Pepper, Administrative Assistant, Silvia Navarro, Treasury Administrator, Art Cuaron, Finance Manager, Shane Oman, Accounting Administrator, Aaron Williams, Finance Manager and David Roels, Principal Accountant. The direction and support extended by the Board of Trustees is also greatly appreciated.

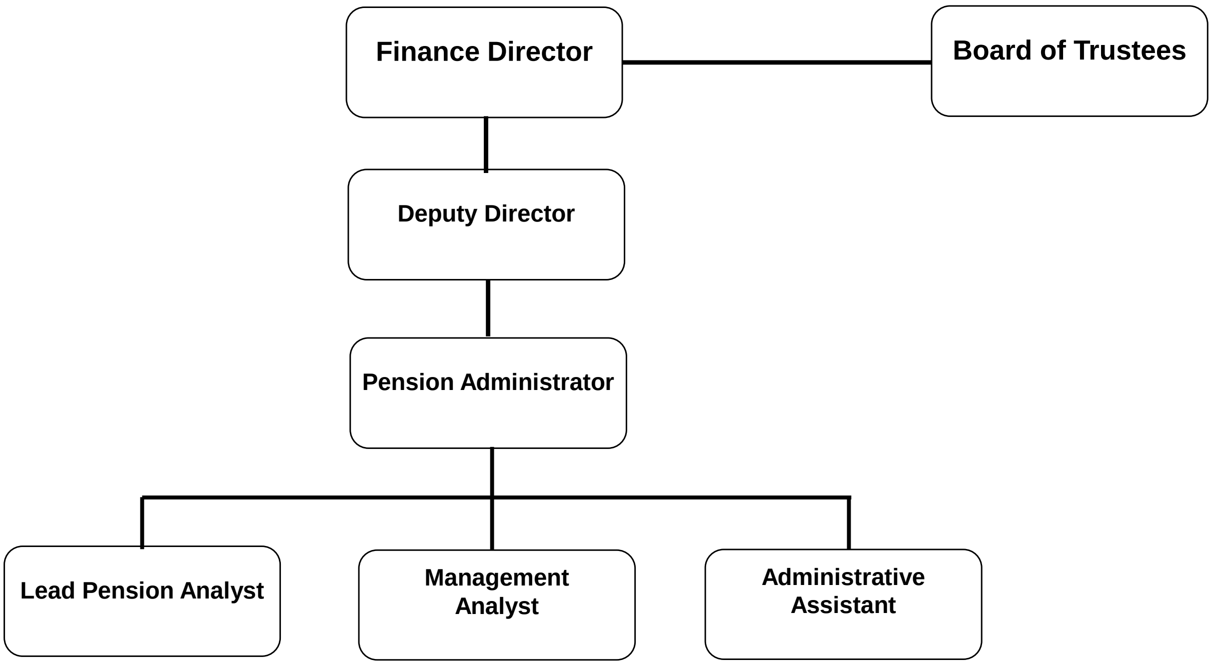
The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Tucson Supplemental Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2015. This was the 20$^{th}$ consecutive year that the Tucson Supplemental Retirement System has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

Respectfully submitted,

Neil S. Galassi, CPA
Pension Administrator
Tucson Supplemental Retirement System

## Organization Chart



# Administrative Organization

**BOARD OF TRUSTEES**
Robert Fleming
Chairman

Kevin Larson
City Manager's Appointee

Silvia Amparano
Finance Director

Rebecca Hill
Interim Human Resources Director

Jorge Hernández
Employee Representative

Michael Coffey
Employee Representative

John O'Hare
Retiree Representative

**FINANCE DEPARTMENT**
Karen Tenace, Deputy Director

**TREASURY DIVISION STAFF**
Silvia Navarro
Treasury Administrator

Art Cuaron
Finance Manager

**RETIREMENT STAFF**
Neil S. Galassi, CPA
Pension Administrator

Bob Szelewski
Lead Pension Analyst

Dawn Davis
Management Analyst

Ginny Rath-Pepper
Administrative Assistant

**ACCOUNTING**
David Roels
Principal Accountant

**LEGAL**
David Deibel
Principal Assistant City Attorney

**External Counsel**
Yoder & Langford, P.C.
Phoenix, AZ

**ACTUARY**
Gabriel, Roeder, Smith & Company
Denver, CO

**AUDITOR**
CliftonLarsonAllen LLP
Tucson, AZ

**INVESTMENT MANAGERS**
Aberdeen Asset Management
Philadelphia, PA

Alliance Capital Management Corporation
New York, NY

American Century Investments
Kansas City, MO

BlackRock Institutional Trust Company, N.A.
San Francisco, CA

Causeway Capital Management
Los Angeles, CA

Pyramis Global Advisors
Smithfield, RI

JP Morgan Asset Management
San Francisco, CA

Pacific Investment Management Company
Newport Beach, CA

Champlain Investment Partners
Burlington, VT

Macquarie Capital (USA), Inc.
New York, NY

SteelRiver Infrastructure
New York, NY

T. Rowe Price Associates
Baltimore, MD

**INVESTMENT CONSULTANT**
Callan Associates, Inc.
San Francisco, CA

**CUSTODIAN BANK**
BNY Mellon – New York, NY

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# FINANCIAL SECTION

CliftonLarsonAllen

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## INDEPENDENT AUDITORS' REPORT

Board of Trustees
Tucson Supplemental Retirement System
Tucson, Arizona

### Report on the Financial Statements

We have audited the accompanying statement of fiduciary net position of Tucson Supplemental Retirement System (the System) as of June 30, 2016 and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

#### *Management's Responsibility for the Financial Statements*

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; 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 auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. 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 auditors' 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 financial position of the Tucson Supplemental Retirement System as of June 30, 2016, and the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

A member of Nexia International

Board of Trustees
Tucson Supplemental Retirement System

***Other Matters***

*Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 3-7 and the required supplementary information on pages 25-28 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 auditing standards generally accepted in the United States of America, which consisted of inquiries 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 opinions on the financial statements that collectively comprise the Tucson Supplemental Retirement System's basic financial statements. The supporting schedules of administrative expenses and investment services expense on page 29 are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The supporting schedules of administrative expenses and investment services expense are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supporting schedules of administrative expenses and investment services expense are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory section, the investment section, the actuarial section, and the statistical section 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.

**Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated December 22, 2016, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the result of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

CliftonLarsonAllen LLP

**CliftonLarsonAllen LLP**

Tucson, Arizona
December 22, 2016

## MANAGEMENT'S DISCUSSION AND ANALYSIS

We are pleased to provide this overview and analysis of the financial activities of the Tucson Supplemental Retirement System (TSRS) for the plan year ended June 30, 2016. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished in our Letter of Transmittal, which begins on page ii of this report.

*Financial Highlights*

- The net position of TSRS as of the close of the plan year ended June 30, 2016 was $726,782,879 (net position restricted for pensions). The net position is available to meet TSRS's ongoing obligations to plan participants and their beneficiaries.

- TSRS's decrease in total net position restricted for pension benefits was $13,010,668. The decrease of 1.7% over the prior year was primarily a result of payments to participants exceeding employer and employee contributions and investment income.

- TSRS's funding objective is to establish and receive contributions, which will remain approximately level from year to year and thereby minimize inter-generational cost transfers. As of June 30, 2016, the date of our last actuarial valuation, the funded ratio for TSRS was 71.1% on an actuarial basis, 70.7% using the market value basis.

- Revenues (Additions to Plan Net Position) for the year were $58,332,789, which includes member and employer contributions plus transfers from other systems and contributions from other sources totaling $40,364,405, investment earnings income and securities lending income and expense of $13,147,097 and a net gain in fair value of investments of $8,758,641 reduced by investment expenses of $3,937,354.

- Expenses (Deductions from Plan Net Position) increased from $68,262,756 in the prior year to $71,343,458 or approximately 4.5%. The net increase in deductions primarily resulted from an increase in pension benefits paid of $2,694,038.

*Overview of the Financial Statements*

The following discussion and analysis is intended to serve as an introduction to TSRS's financial statements, which are comprised of these components:

1. Statement of Fiduciary Net Position
2. Statement of Changes in Fiduciary Net Position
3. Notes to the Financial Statements

Please note that this report also contains other supplementary information in addition to the basic financial statements themselves, including details of the system's investments, actuarial analysis, and various statistical information found in sections under those names.

*The Statement of Fiduciary Net Position* is a snapshot of account balances at year-end. It indicates the assets available for future payments to retirees and any current liabilities that are owed at this time.

*The Statement of Changes in Fiduciary Net Position,* on the other hand, provides a view of current year additions to and deductions from the plan.

Both statements comply with applicable Governmental Accounting Standards Board (GASB) Statements. These pronouncements require certain disclosures and require state and local governments to report using the full accrual method of accounting. TSRS complies with all material requirements of these pronouncements.

The Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position report information about TSRS's activities. These statements include all assets, deferred outflows, liabilities and deferred inflows, using the full accrual basis of accounting, which is similar to the accounting used by most private-sector companies. All of the current year's revenues and expenses were taken into account regardless of when cash is received or paid. All investment gains and losses are shown at trade date, not settlement date. In addition, both realized and unrealized gains and losses are shown on investments, and all capital assets (fixed assets) are depreciated over their useful lives.

TSRS's net position restricted for pensions is displayed on the Statement of Fiduciary Net Position as the difference between assets and liabilities. Over time, increases and decreases in TSRS's net position is one indicator of whether its financial condition is improving or deteriorating. (See TSRS's financial statements on pages 8 and 9 of this report).

*Notes to the Financial Statements* provide additional information that is essential to a full understanding of the data provided in the financial statements. (See Notes to Financial Statements on pages 10-24 of this report).

*The Required Supplementary Information* that follows immediately after the notes to financial statements provides new information and schedules due to the GASB 67 implementation in fiscal year 2014. These schedules started with one year as of June 30, 2014, but eventually will build up to ten years of information.

*<u>Financial Analysis</u>*

As previously noted, net position may serve over time as a useful indication of TSRS's financial position (see table on page 5). The total assets of TSRS exceeded its liabilities at the close of the plan year ended June 30, 2016 with $726,782,879 in net position held in trust for payment of ongoing obligations to plan participants and their beneficiaries.

*Net Position of the Plan*

| **Assets** | **6/30/16** | **6/30/15** | **% change** |
|---|---|---|---|
| Cash, Cash Equivalents and Receivables | 4,828,822 | 6,759,380 | -28.6% |
| Investments | 722,370,463 | 735,578,360 | -1.8% |
| Securities Lending Cash Collateral | 20,407,804 | 19,876,248 | 2.7% |
| **Total Assets** | **$ 747,607,089** | **$ 762,213,988** | **-1.9%** |
| | | | |
| **Liabilities** | | | |
| Accounts Payable and Other Payables | 416,406 | 400,538 | 4.0% |
| Due to Securities Lending Borrowers | 20,407,804 | 19,876,248 | 2.7% |
| Due to Brokers | - | 2,143,655 | -100.0% |
| **Total Liabilities** | **$ 20,824,210** | **$ 22,420,441** | **-7.1%** |
| | | | |
| **Total Net Position** | **$ 726,782,879** | **$ 739,793,547** | **-1.8%** |

At June 30, 2016, the Total Net Position Restricted for Pension of $728,234,240 was available for payment of pension benefits, as shown in the Statement of Plan Position on page 8. This amount represents a decrease of 1.6% from June 30, 2015.

*Additions to Plan Net Position*

| | **Additions to Net Assets - TSRS** | | |
|---|---|---|---|
| | **6/30/16** | **6/30/15** | **% change** |
| Employer Contributions | 33,175,307 | 33,985,523 | -2.4% |
| Employee Contributions | 7,083,385 | 7,531,845 | -6.0% |
| Net gain (loss) in Fair Value of Investments | 8,758,641 | 22,467,139 | -61.0% |
| Investment and securities lending income (net) | 9,315,456 | 8,335,296 | 11.8% |
| **Total Additions** | **$ 58,332,789** | **$ 72,319,803** | **-19.3%** |

Employer contributions decreased by $810,216; or 2.4%, and employee contributions decreased by $448,460, or 6.0%. A total of $755,299 was received from employees purchasing service credits, and transfers into the Plan from other systems totaled $27,372 during this fiscal year. Net gain in Fair Value of Investments decreased by $13,708,498, or 61.0% over the prior year; and income from investment and securities lending increased for the current year by $980,160 or 11.8%, resulting primarily from increases in dividends and interest income received during the fiscal year.

*Deductions from Plan Net Position*

The principal purpose for which the System was created was to provide supplemental retirement annuities, survivor benefits, and total and permanent disability benefits to qualified members and their beneficiaries. The costs of such programs include recurring benefit payments as required by the plan design, refunds of contributions to terminated employees, the cost of administering the System and expenses incurred in the investment of the Systems assets.

Total deductions for fiscal year 2016 were $71,343,458 representing an increase of 4.5% from fiscal year 2015 deductions. An increase in the payment of retirement benefits of $2,694,038 was the largest factor contributing to the increase in deductions. This was primarily due to retirement incentives offered by the City that resulted in 188 members retiring during the fiscal year which represents an 86.1% increase over prior year member retirements of 101. Additional deductions were transfers to other systems in the amount of $35,912 and member contribution refunds in the amount of $2,499,342.

*Deductions from Plan Net Position*

| | | 06/30/16 | | 06/30/15 | % change |
|---|---|---|---|---|---|
| Retirement Benefits | | 67,910,496 | | 65,216,458 | 4.1% |
| Refund of Contributions | | 2,499,342 | | 2,254,185 | 10.9% |
| Transfers to Other Retirement Plans | | 35,912 | | 141,708 | -74.7% |
| Administrative Expenses | | 786,028 | | 650,405 | 20.9% |
| Miscellaneous Deductions | | 111,679 | | - | 100.0% |
| Total Deductions | $ | 71,343,457 | $ | 68,262,756 | 4.5% |
| **Net Increase/(Decrease) in Plan Position** | **$** | **(13,010,668)** | **$** | **4,057,047** | **-420.7%** |

*Reserves*

Within net position, the System internally places an amount into a separate Reserve for Employee Contributions for all amounts contributed by members. Deductions are made from this account when the member retires, transfers balances to other retirement systems, or when a member terminates employment and requests a refund. As of the plan year ended June 30, 2016, the balance in this reserve account decreased by $10,448,295 to $133,200,540.

Upon retirement, the system places an amount in Reserves for Retirement Benefits equivalent to the present value of the actuarial benefit selected by the member. When the present value is determined, amounts are added to this reserve from amounts in the Reserve for Employee Contributions and from the Unreserved Net Position balance to fully fund the expected liability. As a result of the change in market value of the system assets, the reserve increased for the plan year ended June 30, 2016 by $38,285,643 to $699,577,704.

The impact of gains or losses recognized during the plan year ended June 30, 2016 affects the amount remaining in the Unreserved Net Position. Employer funding is added to the Unreserved Net Position balance. At retirement, amounts needed to fully fund retirement benefits are transferred from the Unreserved Net Position to the Reserves for Retirement Benefits. As a result of the change in market values of the system's assets, the Unreserved Net Position decreased by $40,848,016 to a negative ending balance of $105,995,365.

*TSRS's Fiduciary Responsibilities*

TSRS's Board of Trustees and management staff are fiduciaries of the pension trust fund. Under the City of Tucson Code the assets can only be used for the exclusive benefit of plan participants and their beneficiaries.

*Requests for Information*

This financial report is designed to provide the Retirement Board of Trustees, our membership, taxpayers, investment managers and other interested parties with a general overview of TSRS's finances and to account for the money it receives. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to:

Tucson Supplemental Retirement System
Attention: TSRS Pension Administrator
City Hall, 5th floor – Finance Administration Office
255 West Alameda Street
Tucson, Arizona 85701
(520) 791-4598

**Tucson Supplemental Retirement System**
**Statement of Fiduciary Net Position**
**June 30, 2016**

| | Pension Trust |
|---|---|
| **ASSETS** | |
| Cash and Cash Equivalents | $ 2,058,745 |
| Interest & Dividends Receivable | 1,857,456 |
| Due from Brokers | 912,621 |
| Short Term Investments | 26,974,161 |
| Securities Lending Cash Collateral | 20,407,804 |
| U.S. Treasuries, Agencies & Other Governmental Bonds | 73,736,561 |
| Bonds and Preferred Stock | 52,865,484 |
| U.S. Equity | 242,729,611 |
| International Bonds & Other Fixed Income Instruments | 45,039,947 |
| International Equity & Comingled Equity Funds | 167,960,887 |
| Real Estate & Comingled Real Estate Funds | 64,188,363 |
| Infrastructure Investment Funds | 48,875,449 |
| **Total assets** | 747,607,089 |
| **LIABILITIES** | |
| Accounts Payable | 411,873 |
| Accrued Payroll Liabilities | 4,334 |
| Due to Securities Borrowers | 20,407,804 |
| Refundable Deposits | 199 |
| **Total liabilities** | 20,824,210 |
| **NET POSITION** | |
| Resticted for Pensions | $ 726,782,879 |

**See Accompanying Notes to Financial Statements**

**Tucson Supplemental Retirement System**
**Statement of Changes in Fiduciary Net Position**
**Year Ended June 30, 2016**

| | |
|---|---|
| **Additions:** | |
| Employer Contributions | $ 33,175,307 |
| Employee Contributions | 7,083,385 |
| Net Increase in Fair Value of Investment | 8,758,641 |
| Interest, Dividends and Other Income | 13,058,239 |
| Securities Lending Income | 148,059 |
| Less: Investment Activity Expense | (3,937,354) |
| Less: Securities Lending Expense | (59,201) |
| Miscellaneous Additions | 105,713 |
| **Total additions** | 58,332,789 |
| **Deductions:** | |
| Payments to Participants | 67,910,496 |
| Refunds and Transfers to Other Plans | 2,535,254 |
| Administrative Expense | 786,028 |
| Miscellaneous Deductions | 111,679 |
| **Total deductions** | 71,343,457 |
| **Change in net position** | (13,010,668) |
| **Net position, beginning of year** | 739,793,547 |
| **Net position, end of year** | $726,782,879 |

**See Accompanying Notes to Financial Statements**

**Tucson Supplemental Retirement System**
**Notes to Financial Statements**
**Year Ended June 30, 2016**

## 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND DISCUSSION OF PLAN NET POSITION

***A. Reporting Entity*** - Due to the extent of the System's financial and operational relationship with the City of Tucson, the System is considered a component unit of the City's financial reporting entity and is included in its Comprehensive Annual Financial Report as a pension trust fund.

***B. Basis of Accounting*** - The System's financial statements are prepared using the accrual basis of accounting and economic resources measurement focus. Employee and employer contributions are recognized when due, pursuant to formal commitments. Benefits and refunds are recognized when due and payable in accordance with the plan provisions.

***C. Investments*** - Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. The fair value of real estate investments is based on independent appraisals. Investments that do not have an established market are reported at estimated fair value, which is determined by the System custodian in consultation with the System's investment managers.

The cost of common stock sold is determined on the average cost method. Realized and unrealized gains or losses are reflected in revenues.

***D. Cash and Cash Equivalents*** – Amounts reported as cash and cash equivalents represent the System's proportionate share of the City's Investment Pool Account.

***E. Deposits*** - In accordance with the City Charter and state statutes, the System is authorized to deposit money in certificates of deposit and interest-bearing accounts provided that deposits in excess of the insured amount are collateralized. State statutes require collateral pledged for deposits to be held in the System's name by a bank other than the pledging bank or by the pledging bank's trust department.

***F. Capital Assets*** – Capital assets of the System currently include moveable equipment items and the capitalized cost of pension administration software, stated at historical cost net of accumulated depreciation. The straight-line method of depreciation for capitalized equipment and software is used over an estimated useful life of 6 years. The capitalization threshold is $5,000. The capital assets were fully depreciated as of June 30, 2016.

***G. Benefit Changes*** – The TSRS Board of Trustees shall determine, pursuant to its formal policy and in its discretion whether the System shall fund an annual supplemental post-retirement benefit payment to retired members and beneficiaries.

***H. Administrative Costs*** - All costs of administering the plan are financed by the employer and member contributions made, based upon recommended contribution rates in effect for the year, applied on active member covered payroll.

***I. Net Pension Liability*** – The components of the net pension liability as of June 30, 2016 are as follows:

| | | |
|---|---|---|
| Total Pension Liability | $ | 1,030,694,946 |
| Plan's Fiduciary Net Position | | 726,782,879 |
| Net Pension Liability | | 303,912,067 |

| | | |
|---|---|---|
| • Plan Fiduciary Net Position as a Percentage of Total Pension Liability | | 70.51% |
| • Covered Employee Payroll | $ | 115,183,349 |
| • Net Pension Liability as a Percentage of Covered Employee Payroll | | 262.59% |

***J. Tax Status of the Plan*** – The System applied for an IRS determination letter in January 2015. However as of fiscal year end, the IRS has acknowledged receipt but has yet to process the determination. The System received its last favorable determination (qualified status) from the IRS on July 19, 2012.

***K. Adoption of GASB No. 72*** – In February 2015, the GASB issued Statement No. 72, Fair Value Measurement and Application. The definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This Statement provides guidance for determining a fair value measurement for financial reporting purposes. This Statement also provides guidance for applying fair value to certain investments and disclosures related to all fair value measurements. The requirements of this Statement are effective for financial statements for periods beginning after June 15, 2015. The System reported fair market values in Note 4 as required.

## 2. DESCRIPTION OF THE PLAN

**A.** ***Authorization, Purpose, and Administration of the System*** - The Tucson Supplemental Retirement System (the "System" or "TSRS") is a single-employer defined benefit plan for City of Tucson, Arizona ("City") employees. It was established in the City Charter to provide its members with a supplement to the retirement and disability benefits of the social security system. The System is governed by a seven member Board of Trustees: a chairman who is appointed by the Mayor and Council, the City's directors of human resources and of finance, two members elected by the membership of the System, a retired member elected by the System's retirees, and one member appointed by the City Manager. Benefit provisions and changes in benefits or funding are recommended by the Board of Trustees and must be approved by Mayor and Council.

**B.** ***Plan Membership*** - The System covers substantially all City of Tucson, Arizona, employees, except for appointed officials and staff who may elect not to join, commissioned police and fire personnel, and elected officials, who are covered under other plans. Employees participate in the System immediately upon beginning employment with the City. Employee membership data as of June 30, 2016 is as follows:

| | |
|---|---|
| **Membership – number of:** | |
| **Retirees and Beneficiaries** | 2,945 |
| **Inactive, Non-retired Members** (78 non vested) | 390 |
| **Active plan participants** | 2,495 |
| **Total Membership** | 5,830 |

## C. *Plan Benefits*

1. *Retirement Benefits*

- Tier I benefit plan: Any employee hired prior to July 1, 2011, who has attained the earlier of age 62, or a combination of the employee's age and years of creditable service equaling the sum of 80, is entitled to receive monthly retirement benefits calculated at 2.25% of average final monthly compensation multiplied by the number of years of creditable service. Employees hired after July 1, 2009 receive the same benefit, but are required to have a minimum of five years accrued service. Average final monthly compensation is defined as the highest compensation of 36 consecutive months during the 120 months immediately preceding retirement. Accrued unused sick leave and vacation leave at the final salary is included in the member's service period and is substituted for an equal number of hours at the beginning of the 36 month period for determining the average final salary calculation.

- Tier II benefit plan: Any employee hired after June 30, 2011, who has attained the minimum retirement age of age 60, and who also has a combination of employee age and years of service equaling the sum of 85, is entitled to receive monthly retirement benefits calculated at 2.00% of average final monthly compensation multiplied by the number of years of creditable service. Average final monthly compensation is defined as the highest compensation of 60 consecutive months during the 120 months immediately preceding retirement. Accrued unused sick leave and vacation leave at the final salary is not included for member service credits or as a substitution for an equal number of hours at the beginning of the 60 month period final average salary calculation.

An employee who retires after attaining age 55 with 20 or more years of creditable service under Tier I; or after attaining age 60 with 20 or more years of credited service under Tier II, is entitled to early retirement benefits reduced to the actuarial equivalent of the amount to which the employee would have been entitled upon attaining normal retirement.

An employee is always fully vested in his/her individual contributions. Upon termination of employment for reasons other than retirement, employees having five or more years of creditable service (terminated vested participants) may leave their contributions in the System as a deferred retirement, and begin drawing a retirement allowance when they reach either their normal or early retirement eligibility date.

2. Disability Benefits - Employees with ten or more years of accrued service, who are not yet eligible to retire and who have a total and permanent disability may apply for disability retirement.

3. Death Benefits - The beneficiary of an employee who pre-selected a retirement option and died while eligible to retire, shall receive a benefit based upon the selected option if the member has made such an election by June 30, 2009.

The spousal beneficiary of an employee who died while eligible to receive benefits but who had not pre-selected a benefit option by June 30, 2009, may choose to receive a benefit equal to a 100% joint and survivor annuity based on the member's years of credited service and average final monthly compensation at the time of the member's death, or may elect to receive a lump sum payment of twice the members account balance plus interest, measured on the date of death.

The named beneficiary of an employee who is other than the spouse of the employee who died while eligible to receive benefits but who had not pre-selected a benefit option by June 30, 2009, may choose to receive a benefit equal to a 15 year term certain benefit to the named beneficiary, or the beneficiary may elect to receive a lump sum payment of twice the members account balance plus interest, measured on the date of death.

Multiple designated beneficiaries of an employee who died while eligible to receive benefits but who had not pre-selected a benefit option by June 30, 2009, receive a lump sum payment of twice the member's account balance plus interest, measured on the date of death.

The beneficiary of an employee who was not eligible for any retirement benefits, but had more than five years of creditable service, may receive a lump sum payment of twice the member account balance plus interest, measured on the date of death.

## 3. CONTRIBUTIONS AND RESERVES

### *A. Funding Requirements*

***1.*** *Employee Contributions* - Employee contributions are 5% of active member covered payroll for employees hired prior to July 1, 2006. Employees hired after June 30, 2006 are contributing an amount equal to 40% of the actuarially required contribution rate determined annually by the system Actuary. For the fiscal year ended June 30, 2016, the employee blended contribution rate was 5.15%. All member contributions are made by payroll deductions applied to regular pay, based on the approved contribution rates established by the system Actuary, applied as a percent of payroll.

Effective July 1, 2013, the funding policy changed for employees hired after June 30, 2006; requiring a contribution rate that is equal to a range of between 50% and 100% of the normal cost of the members benefit Tier. For Tier I members (hired between July 1, 2006 and June 30, 2011), the contribution rate for fiscal year 2016 was 6.75%. For Tier II members (hired after July 1, 2011), the contribution rate for fiscal year 2016 was 5.25%. A reserve is established for contributions and earnings allocations, less amounts transferred to the reserve for retirement benefits which includes retirement and disability and amounts reserved for terminated employees. If an employee leaves covered employment before attaining five years of service credit, the accumulated contributions plus interest are refunded to the employee or his designated beneficiary. There are no long-term contracts for employee contributions to the plan, and all contributions are made on a bi-weekly basis.

***2.*** *Employer Contributions* – Employer contributions are based on the annual required contribution rate determined by the Actuary, and are equal to the difference between the recommended total contribution rate and the employee rates, based on a level percentage of payroll method. The contribution rate is determined by the actuary at a level necessary to finance employee participation in the System and to fund the costs of administering the System. The annual rate determined by the Actuary is recommended to the Board of Trustees and considered for approval and adoption by Mayor and Council. There are no long-term contracts for employer contributions to the plan, and all contributions are made on a bi-weekly basis.

### *B.* Net Position

Two general types of net position reserves are maintained within the System. The Reserve for Employee Contributions contains the employee contributions for all contributing members of the System, plus allocated interest earnings. At the time an employee retires or defers retirement, the actuarial value of the individual's retirement benefits is transferred to the Reserve for Retirement Benefits, which is decreased by payments to retirees and increased by interest earnings. The reserves for employee contributions and retirement benefits are fully funded.

Earnings of the System are allocated semi-annually (at June 30 and December 31) to the reserves which comprise net position. For the year ended June 30, 2016, allocations were based on rates of return of 6.00% per annum. Any unallocated earnings remain in unreserved net position.

The net position at June 30, 2016, consisted of the following components:

| | | |
|---|---|---|
| Reserved for employee contributions | $ | 133,200,540 |
| Reserved for retirement benefits | | 699,577,704 |
| Unreserved net position (deficit) | | (105,995,365) |
| Net Position | $ | 726,782,879 |

## 4. INVESTMENTS

The System is governed by a Board of Trustees. The Board of Trustees is required by City Code, in making investment decisions, to exercise the judgment and care under the circumstances then prevailing which persons of ordinary prudence, discretion and intelligence exercise in management of their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income there from, as well as the probable safety of the capital. Investments of the System are held and managed by investment professionals separately from those of other City funds. Quoted market prices have been used to value investments as of June 30, 2016.

For those investments that do not have established market exchanges, the fair value is estimated as objectively as possible by third party appraisals. Real Estate and Infrastructure investment managers utilize third party appraisals to determine fair value of assets under investment. Infrastructure investments pertain to forms of "real" property used for general public purposes that typically involve partnerships between governmental and private entities. Examples of infrastructure investments are toll roads, bridges, pipelines, airports, shipping ports, etc. The System currently participates in two pooled infrastructure funds as well as two real estate funds.

The System's investments at June 30, 2016 are listed below. These investments are either held by the System or its agent in the System's name and are insured, registered or collateralized. A portion of these investments is subject to credit risk (including custodial credit risk and concentrations of credit risk), interest rate risk and/or foreign currency risk. The Government Accounting Standards Board (GASB) Statement No. 40 requires the System to disclose such risks which are all discussed in the sections that follow.

All System investments are reflected in the following schedule at fair value net of accruals with the exception of amounts held in the City's investment pool account. The City maintains an investment pool account for City funds. Bi-weekly contributions for the Tucson Supplemental Retirement System are held in the City's investment pool account and are used to pay recurring expenditures. The $2,058,745 cash balance in the City investment pool account is invested in money market funds consisting of U.S. Treasuries and Agencies and separately held issues of federal agency and U.S. corporate bonds with ratings no lower than A2 as reported by Moody's. The System's investment in the City's investment pool represents a proportionate interest in the pool's portfolio; however, the System's portion is not identified with specific investments and is not subject to custodial credit risk.

The System 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 assets. The fair value hierarchy, which as three levels, is based on the valuation inputs used to measure an asset's fair value: Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The System has the following recurring fair value measurements as of June 30, 2016:

| Investments | Fair Value | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| U.S. Issues not on Securities Loan: | | | | |
| U.S. Treasuries, Agencies, Governmental Bonds & Comingled U.S. Debt | $ 73,736,561 | $ 682,742 | $ 1,055,236 | $ 71,998,583 |
| Corporate Bonds & Other Fixed Income Instruments | 49,605,225 | - | 47,730,271 | 1,874,954 |
| U.S. Equity & Commingled Equity Funds | 227,405,668 | 146,255,603 | - | 81,150,065 |
| Non-U.S. Issues not on Securities Loan: | | | | |
| International Bonds & Other Fixed Income Instruments | 45,039,947 | - | 42,728,235 | 2,311,712 |
| International Equity & Commingled Equity Funds | 166,658,890 | 63,961,945 | - | 102,696,945 |
| Subtotal | 562,446,291 | 210,900,290 | 91,513,742 | 260,032,259 |
| Investments Held by Broker-Dealers Under Securities Loans with Cash Collateral: | | | | |
| U.S. Corporate Bonds & Other Fixed Income Instruments | 3,260,259 | - | 3,260,259 | - |
| U.S. Equity | 15,323,943 | 15,323,943 | - | - |
| International Equity | 1,301,997 | 1,301,997 | - | - |
| Subtotal | 19,886,199 | 16,625,940 | 3,260,259 | - |
| Securities Lending Short-Term Collateral Investment Pool | 20,407,804 | - | - | 20,407,804 |
| Money Market Funds/Short-Term Investments | 26,974,161 | - | 1,506,595 | 25,467,566 |
| Real Estate & Commingled Real Estate Funds | 64,188,363 | - | - | 64,188,363 |
| Infrastructure Investment Funds | 48,875,449 | - | - | 48,875,449 |
| Subtotal | 160,445,777 | - | 1,506,595 | 158,939,182 |
| Total Deposits and Investments | $ 742,778,267 | $ 227,526,230 | $ 96,280,596 | $ 418,971,441 |

U.S. treasuries, agencies, money market, and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for identical securities.

Governmental bonds, corporate bonds, other fixed income instruments, and international bonds classified in Level 2 of the fair value hierarchy are valued based on significant other observable inputs, which may include, but are not limited to, quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market corroborated inputs.

Securities valued at Level 3 are based on significant unobservable outputs based on all information available in the circumstances to the extent observable outputs are not available. The fair value of comingled U.S. debt, comingled equity funds, and related short-term investments classified in level 3 represent the value of unit positions in funds that are not publicly traded on an exchange. Fair value of these securities can be impacted by redemption restrictions imposed by the fund managers. Real estate, comingled real estate funds, and infrastructure investment funds are valued using discounted cash flow techniques.

*Investment Policy* – TSRS Investment Policy and asset class allocations are established by the TSRS Board of Trustees and may be amended by majority vote of its members. The TSRS Board establishes investment policies to pursue an investment strategy that reduces risk through prudent diversification of the portfolio across a broad selection of distinct asset classes.

*Long-term Expected Return on Plan Assets* - Expected rates of return are determined using a building-block method in which best-estimated ranges of expected future real rates of return (expected returns, net of pension plan 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 were adopted by the Plan's trustees after considering input from the Plan's investment consultant and actuary. For each major asset class that is included in the Plan's adopted target asset allocation as of June 30, 2016, these best estimates are summarized in the table shown below:

*Long term expected return on Plan Assets***:**

| Asset Class | Target Allocation | Expected Arithmetic Returns |
|---|---|---|
| Large Cap U.S. Equities | 26% | 6.35% |
| Small/Mid Cap U.S. Equities | 8% | 7.60% |
| International Equities | 25% | 7.30% |
| Fixed Income | 27% | 0.80% |
| Real Estate | 9% | 4.95% |
| Infrastructure | 5% | 6.50% |
| Total | 100% | |
| Weighted Average Arithmetic Returns, in proportion to asset allocation | | 5.07% |

*Concentrations* – TSRS did not hold investments (other than those explicitly guaranteed by the U.S. Government) in any one organization that represents 5 percent or more of the Plan's fiduciary net position at June 30, 2016.

*Rate of Return* – For the year ended June 30, 2016, the annual money-weighted rate of return on the Plan's investments, net of pension plan investment expenses, was 2.38%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

*Sensitivity of Net Pension Liability to the Single Discount Rate Assumption*

Below is a table providing the sensitivity of the net pension liability to changes in the discount rate. In particular, the table presents the plan's net pension liability, if it were calculated using a single discount rate that is 1 percentage-point lower or 1 percentage-point higher than the single discount rate:

| 1% Decrease 6.25% | Current Single Discount Rate Assumption 7.25% | 1% Increase 8.25% |
|---|---|---|
| $ 407,718,893 | $ 302,460,706 | $ 212,694,267 |

**Credit Risk** – As defined by GASB Statement No. 40, credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Associated with credit risk is concentration of credit risk and custodial credit risk. Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. Custodial credit risk for deposits and investments is the risk that, in the event of the failure of a depository financial institution or the counterparty to a transaction, a government will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party.

The System presently maintains two externally managed fixed income (bond) accounts which are exposed to some form of credit risk. The assets in the first account are actively managed while the assets in the second account are invested in a commingled bond index fund (passively managed).

The TSRS Board has given the actively managed account manager discretion to invest in a broad array of public and private asset classes, instruments and investment vehicles in order to meet or exceed the agreed upon investment return custom benchmark. However, the following specific investment policy guidelines pertain to this manager:

- The maximum position in a single issuer (excluding obligations of U.S. Government and its Agencies) should not exceed 5% of the portfolio's assets at current market value
- The portfolio should maintain an average quality of at least "BB+"
- Money market instruments must be rated in one of the two highest categories by a nationally recognized rating agency
- The minimum rating of individual issues should be CCC (based on market value) as rated by Moody's, Standard & Poor's or Fitch

The passive fund is expected to replicate, as close as possible, the characteristics, quality and performance of its underlying index, the BC Aggregate Bond Index.

The System currently does not have a policy regarding custodial credit risk for deposits or investments as defined in the Credit Risk section above.

The System had the following credit risk structure as of June 30, 2016:

| Investment Type | | Holdings | Average Credit Rating (1) | Fair Value | | Percent of Total |
|---|---|---|---|---|---|---|
| Cash & Short Term Investment Funds: | | | | | | |
| Cash and Cash Equivalents | | 26 | Aa1 | 26,668,184 | | |
| Fixed Income Swaps & Options | | 23 | Aa1 | 305,977 | | |
| | Subtotal | 49 | | 26,974,161 | | 13.58% |
| U.S. Agency & Other Governmental Obligations: | | | | | | |
| Municipal Bonds | | 5 | B3 | 1,055,236 | | |
| Futures | | 3 | Aaa | 682,742 | | |
| BlackRock U.S. Debt Fund | | 1 | Aaa | 71,998,583 | | |
| | Subtotal | 9 | | 73,736,561 | | 37.12% |
| U.S. Corporate Bonds & Other Fixed Income Instruments: | | | | | | |
| Asset Backed Securities | | 3 | Baa3 | 321,680 | | |
| Collateralized Mortgage Obligations | | 5 | Aa2 | 557,771 | | |
| Fixed Income Swaps & Options | | 19 | Baa3 | (540,314) | **(2)** | |
| Banking & Finance | | 19 | Ba3 | 7,647,612 | | |
| Health Care | | 2 | Ba1 | 1,096,375 | | |
| Oil, Gas & Chemicals | | 25 | Baa1 | 6,144,979 | | |
| Communications | | 3 | Ba3 | 926,698 | | |
| Utilities | | 14 | Baa3 | 4,460,556 | | |
| Other Corporate Issues | | 47 | Ba3 | 15,114,616 | | |
| PIMCO Private Mortgage Sector Fund | | 4 | Aa1 | 17,135,511 | | |
| | Subtotal | 141 | | 52,865,484 | | 26.62% |
| International Bonds & Other Fixed Income Instruments: | | | | | | |
| Banking & Finance | | 19 | Baa1 | 6,674,294 | | |
| Fixed Income Swaps & Options | | 18 | Aa1 | (244,992) | **(2)** | |
| Government Bonds | | 23 | Baa3 | 8,711,287 | | |
| Futures | | 4 | Aaa | (98,464) | **(2)** | |
| Communications | | 7 | B3 | 1,952,317 | | |
| Oil, Gas & Chemicals | | 12 | Ba1 | 5,581,777 | | |
| Utilities | | 5 | Ba3 | 1,582,762 | | |
| Other Corporate Issues | | 58 | Ba2 | 20,880,966 | | |
| | Subtotal | 146 | | 45,039,947 | | 22.68% |
| TOTAL | | 199 | | 198,616,153 | | 100% |

Footnotes

(1) Per Moody's Investors Service, Inc. (Moody's)
(2) A negative value in any of the instruments noted above is the result of netting long and short positions against each other. This strategy is utilized as a means to mitigate interest rate risk from holding long positions in mortgages and / or corporate bonds.

**Interest Rate Risk** – As defined by the Government Accounting Standards Board (GASB) in Statement 40, interest rate risk is the risk that changes in interest rates will adversely affect the fair value of investments. For fixed income securities, there is an inverse relationship between the change in interest rates and their fair value. For example, in a rising interest rate environment the value of fixed income securities will tend to fall by varying degrees depending on the length of their maturities. In general, the value of fixed income securities with a longer duration will tend to decrease more than shorter duration securities in a rising interest rate environment.

The System's investment policy regarding interest rate risk for the actively managed fixed income account, is to limit duration to within 30% of the custom benchmark which is defined as 25% BC Mortgage Index, 25% BC Credit Index, 25% BC High Yield Index and 25% JPM EMBI Global Index. The passive fund should match, as close as possible, the maturity structure and duration of the BC Aggregate Bond Index.

The System had the following maturity structure as of June 30, 2016:

**Maturity Structure**

| | Investment Maturities (in Years) | | | | |
|---|---|---|---|---|---|
| **Investment Type** | **Less Than 1** | **1 - 5** | **6 - 10** | **More Than 10** | **Fair Value** |
| Cash & Short Term Investment Fund | $ 26,974,161 | $ - | $ - | $ - | $ 26,974,161 |
| U.S. Agency & Other Governmental Obligations | - | - | 362,352 | 1,375,626 | 1,737,978 |
| BlackRock U.S. Debt Fund | - | - | 71,998,583 | - | 71,998,583 |
| U.S. Corporate & Other Fixed Income Instruments | 22,071,318 | 11,681,347 | 13,866,723 | 5,246,096 | 52,865,484 |
| International Bonds & Other Fixed Income Instruments | 3,349,845 | 11,708,824 | 18,677,862 | 11,303,416 | 45,039,947 |
| TOTAL | $ 52,395,324 | $ 23,390,171 | $ 104,905,520 | $ 17,925,138 | $ 198,616,153 |

Effective Duration:

| | |
|---|---|
| Active Account | 4.69 years |
| Passive Account | 5.17 years |

Note: The information indicated has been presented using the specific identification method

**Foreign Currency Risk** – As defined by the Governmental Accounting Standards Board (GASB) in Statement 40, foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit.

The TSRS Board has given the System's international equity managers discretion to invest in a broad array of common and preferred stocks, convertibles and warrants of companies headquartered outside of the United States in order to meet or exceed their agreed upon investment return benchmarks. However, the following specific investment policy guidelines pertain to these managers:

- Investments in any single country market should not exceed more than 4 times the weight of the country in the benchmark index or 50% of portfolio assets, whichever is lower
- If a country has a greater than 50% weight in the index, the maximum exposure to that country in the portfolio may be as high as its weight in the index
- No more than 35% of each manager's portfolio should be invested in "emerging markets" (i.e., markets that are not included in the Morgan Stanley Capital International Europe, Australia and Far East Index)
- Managers are permitted to enter into hedging strategies, including cross-currency hedges, using forward currency exchange contracts and currency options
- Derivatives should not be used for the purpose of speculation or for leveraging the portfolio

## **Foreign Currency Risk** (continued from previous page)

The TSRS fund had the following foreign currency risk exposure as of June 30, 2016:

### Foreign Currency Risk Exposure

| Currency Type | Cash & Cash Equivalents (1) | Fixed Income (1) | Equity | Real Estate | Infra-structure | Foreign Exchange Contracts (2) | Fair Value | Percent of Total |
|---|---|---|---|---|---|---|---|---|
| Australian Dollar | $ (30,354) | | $ 676,745 | | | | $ 646,391 | 0.089% |
| Brazil Real | 31,461 | | | | | | 31,461 | 0.004% |
| Canadian Dollar | 390 | | 115,502 | | | | 115,892 | 0.016% |
| Euro Currency Unit | 339,903 | 14,041,146 | 18,242,406 | | 23,137,016 | (122,727) | 55,637,744 | 7.702% |
| Japanese Yen | 19,432 | | 8,673,840 | | | | 8,693,272 | 1.203% |
| Mexican Peso | 31 | | | | | | 31 | 0.000% |
| Polish Zloty | 11,663 | | | | | | 11,663 | 0.002% |
| British Pound Sterling | 187,345 | 4,433,413 | 14,958,329 | | | 24,263 | 19,603,350 | 2.714% |
| S. African Comm Rand | 8,361 | | | | | | 8,361 | 0.001% |
| Swiss Franc | 723 | 89,561 | 7,747,594 | | | | 7,837,878 | 1.085% |
| Currency Subtotals | 568,955 | 18,564,120 | 50,414,416 | - | 23,137,016 | (98,464) | 92,586,043 | 12.816% |
| U.S. Dollar | 26,443,737 | 148,597,471 | 364,133,674 | 64,188,363 | 25,738,433 | 682,742 | 629,784,420 | 87.183% |
| TOTAL | $ 27,012,692 | $ 167,161,591 | $ 414,548,090 | $ 64,188,363 | $ 48,875,449 | $ 584,278 | $ 722,370,463 | 100% |
| | *3.74%* | *23.14%* | *57.39%* | *8.89%* | *6.77%* | *0.08%* | *100%* | |

**Footnotes:**

(1) A negative value in the instruments noted above is the result of netting long and short positions against each other. This strategy is utilized as a means to mitigate interest rate risk obtained from holding long positions in mortgages and/or corporate bonds.

(2) A negative currency position is obtained by accepting an obligation to deliver the designated currency to a counterparty at a specified date in the future. This position is favorable for portfolio returns if the currency depreciates in value versus the U.S. dollar over the period of the contract.

## 5. SECURITIES LENDING

The Board of Trustees for the Tucson Supplemental Retirement System permits the custodian bank, BNY Mellon, to lend securities to broker-dealers and other entities. Each loan is executed with a simultaneous agreement to return the collateral for the same securities in the future. The custodian bank lends U.S. securities for collateral initially valued at 102% of the fair value of the securities plus any accrued interest. Non-U.S. securities are loaned for collateral initially valued at 105% of the fair value of the securities plus any accrued interest. Collateral is marked-to-market daily. As of June 30, 2016, the carrying amount and fair value of securities on loan was $19,886,199. If the fair value of the pledged collateral falls below the specified levels, additional collateral is required to be pledged by the close of the next business day.

In the event of a borrower's default, the custodian bank is obligated to indemnify the lender if, and to the extent that, the fair value of the collateral is insufficient to replace the loaned securities. BNY Mellon's responsibilities include performing appropriate borrower and collateral investment credit analysis, demanding adequate types and levels of collateral, and complying with applicable Department of Labor and Federal Financial Institutions Examination Council regulations covering securities lending.

Although the average term of the security loans is one week, each loan can be terminated at will by either the lender or the borrower. Cash collateral is invested in a short-term investment pool, which on average had a weighted maturity of 30 days. The relationship between the maturities of the investment pool and the security loans are affected by the maturities of the loans made by other entities that use the agent's pool.

The lender cannot pledge or sell collateral securities received until, and unless, a borrower defaults. There were no significant violations of legal or contractual provisions and no borrower or lending agent default losses known to the securities lending agent during the fiscal year. As of June 30, 2016, the lenders had no credit risk exposure to borrowers because the fair value of collateral held exceeded the fair value of securities loaned.

## 6. DERIVATIVES

The Tucson Supplemental Retirement System permits the limited use of derivatives by its international equity and external fixed income managers. Examples of derivative instruments permitted, but not limited to, are forward foreign currency exchange contracts, financial futures, options, swaps and swaptions. All derivative instruments utilized are considered "Investment Derivative Instruments" as defined in GASB 53 "Accounting and Financial Reporting for Derivative Instruments." The statement addresses the recognition, measurement, and disclosure regarding derivative instruments entered into by the System.

The following table is a summary of the various derivative instruments utilized by the System's external fixed income manager as of June 30, 2016. Changes in Fair Value are included as part of the overall Increase (Decrease) in Fair Value of Investments in the Statement of Changes in Plan Net Position. Fair Value is included as part of investments listed under Corporate Bonds & Other Fixed Income Instruments in the Statement of Plan Net Position.

## Derivatives

| Investment Derivative Instrument | Notional Amount (1) | Changes in Fair Value | Fair Value (2) | Principal Risk |
|---|---|---|---|---|
| Government Futures | 8,400,000 | $ 3,508,833 | $ 11,428,985 | Interest Rate |
| Options | 21,700,000 | $ 35,969 | $ (27,540) | Credit |
| Currency Forwards (Net) | 1,469,008,379 | $ 1,978,981 | $ 24,466,767 | Foreign Currency |
| Credit Default Swaps | 1,665,000 | $ 370,598 | $ (559,508) | Credit |
| Interest Rate Swaps | (15,050,000) | $ (182,802) | $ (225,643) | Interest Rate |

**Footnotes:**

(1) The Notional Amount is the number of currency units (stated in U.S. and/or foreign currencies), shares or other units specified in the derivative instrument. It is a stated amount on which payments depend.

(2) The notional fair value of the underlying securities is reported in this schedule. Fair market value as reported in the financial statements is presented net of long and short posiitons.

Whenever possible, the investment manager bases the valuation of derivatives on market information; however, where market quotes are not readily available, an independent third party pricing vendor is utilized. Exchange traded derivatives are an example of derivatives where market quotes are available, whereas over-the counter (OTC) derivatives are not traded over standardized markets.

In addition to the principal risks noted above, Forward Foreign Currencies, Credit Default Swaps and Interest Rate Swaps are also subject to counterparty risk. In general, counterparty risk is the risk of loss of an amount expected to be delivered under an agreement in the event of the default or bankruptcy of the counterparty. Generally, counterparty risk is controlled through dealing with a number of different counterparties reasonably deemed to be creditworthy by the investment manager and using agreements with counterparties that permit netting of obligations. Counterparty risk with swaps is limited by execution under standardized International Swap and Derivatives Association Agreements. These contracts allow for the mutual exchange of collateral should an overall unsecured market value exceed a certain threshold (e.g., $250,000).

Credit, interest rate and foreign currency risks are addressed in previous sections of Note 4. These risks, applicable to other fixed income and foreign investments, are not substantially different from principal risks associated with derivative instruments.

## 7. ACTUARIAL METHODS AND ASSUMPTIONS

The total pension liability was determined by an actuarial valuation as of June 30, 2016, using the following actuarial assumptions, applied to all periods included in the measurement:

| | |
|---|---|
| Inflation | 3.00% |
| Salary increases | 3.00% to 6.50% including inflation |
| Investment Rate of Return | 7.25% |

Mortality rates were based on the RP-2000 Combined Mortality Table for males and females, projected with Scale BB to 2020. The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for period July 1, 2008 – June 30, 2013.

*Additional Details:* In the June 30, 2016 actuarial valuation, the level-percent contribution requirements and actuarial present values are calculated using the entry age actuarial cost method. The actuarial assumptions included (a) 7.25 percent investment rate of return (net of administrative expenses); (b) projected salary increases at 3.00% compounded annually; and (c) additional projected salary increases of 0.00% to 3.50% attributable to seniority / merit. The assumptions do not include postretirement benefit increases or inflation assumptions, because there is no guarantee or requirement that future increases will be granted.

The projection of benefits for financial accounting purposes also does not explicitly incorporate the potential effects of legal or contractual funding limitations, since they do not apply. The actuarial value of assets was determined using techniques that spread the effects of short term volatility in the market value of assets over a five-year smoothing period, which was first adopted for the plan year ended June 30, 2009. The Unfunded Actuarial Accrued Liability is being amortized as a level percentage of payroll on an open period of 20 years; the new amortization period was first adopted for the plan year ended June 30, 2013. There were no benefit changes during the year ended June 30, 2016.

The assumptions are selected based upon the recommendation of the plan's actuary and adopted by the Board of Trustees.

*Measurement of Net Pension Liability:* The net pension liability is measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirements.

A single discount rate of 7.25% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.25%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investment was applied to all period of projected benefit payments to determine the total pension liability.

## REQUIRED SUPPLEMENTARY INFORMATION

### SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
### YEAR ENDED JUNE 30, 2016

| | 2016 | 2015 | 2014 |
|---|---|---|---|
| **Total Pension Liability** | | | |
| Service Cost | $ 14,279,065 | $ 15,753,944 | $ 14,825,019 |
| Interest Cost | 72,013,831 | 70,688,775 | 66,915,612 |
| Differences Between Expected and Actual Experience | (6,529,764) | (7,815,270) | 325,889 |
| Changes of Assumptions | - | (31,210,057) | 76,945,563 |
| Benefit Payments, Including Refunds of Member Contributions | (70,445,750) | (67,612,351) | (66,002,013) |
| **Net Change in Total Pension Liability** | 9,317,382 | (20,194,959) | 93,010,070 |
| **Total Pension Liability - Beginning** | 1,021,377,564 | 1,041,572,523 | 948,562,453 |
| **Total Pension Liability - Ending** | $ 1,030,694,946 | $ 1,021,377,564 | $ 1,041,572,523 |
| **Plan Fiduciary Net Position** | | | |
| Contributions - Employer | $ 33,175,307 | $ 33,985,523 | $ 34,189,288 |
| Contributions - Member | 7,083,385 | 7,531,845 | 7,338,543 |
| Net Investment Income | 17,820,325 | 30,684,188 | 119,729,154 |
| Benefit Payments, Including Refunds of Member Contributions | (70,445,750) | (67,612,351) | (66,002,013) |
| Administrative Expense | (786,028) | (650,405) | (735,739) |
| Other | 142,093 | 118,247 | 171,077 |
| Net Change in Plan Fiduciary Net Position | (13,010,668) | 4,057,047 | 94,690,310 |
| **Plan Fiduciary Net Position - Beginning** | 739,793,547 | 735,736,500 | 641,046,190 |
| **Plan Fiduciary Net Position - Ending** | $ 726,782,879 | $ 739,793,547 | $ 735,736,500 |
| **Net Pension Liability - Ending** | $ 303,912,067 | $ 281,584,017 | $ 305,836,023 |
| **Plan Fiduciary Net Position as a Percentage of the Total Pension Liability** | 70.65% | 72.43% | 70.64% |
| Covered Employee Payroll | $ 115,183,349 | $ 123,414,560 | $ 126,639,423 |
| Net Pension Liability as a Percentage of Covered Employee Payroll | 262.59% | 228.16% | 241.50% |

Note: This schedule is intended to display ten years of information. The additional years will be displayed as they become available.

**CITY OF TUCSON, ARIZONA**
**REQUIRED SUPPLEMENTARY INFORMATION**
**SCHEDULE OF PENSION INVESTMENT RETURNS**

| | 2016 | 2015 | 2014 |
|---|---|---|---|
| Annual Money-Weighted Rate of Return, Net of Investment Expense | 2.38% | 4.17% | 19.11% |

Note: This schedule is intended to display ten years of information. The additional years will be displayed as they become available.

## Schedule of Contributions

| Fiscal Year Ending June 30, | Actuarial Valuation Date June 30, | Actuarially Determined Rate (%) | Actual Contribution Rate (%) | Actual Contribution | Rate Deficiency (Excess) (%) | Contribution Deficiency (Excess) | Covered Payroll at Val Date | Covered Payroll during FY |
|---|---|---|---|---|---|---|---|---|
| 2007 | 2005 | 15.04 | 15.04 | 25,958,330 | 0.00 | n/a | 162,149,200 | 162,149,200 |
| 2008 | 2006 | 15.21 | 15.21 | 25,232,745 | 0.00 | n/a | 155,855,162 | 155,855,162 |
| 2009 | 2007 | 14.67 | 14.67 | 24,358,460 | 0.00 | n/a | 159,249,822 | 159,249,822 |
| 2010 | 2008 | 16.84 | 16.84 | 27,601,156 | 0.00 | n/a | 153,982,399 | 153,982,399 |
| 2011 | 2009 | 18.02 | 18.02 | 28,756,890 | 0.00 | n/a | 149,924,649 | 149,924,649 |
| 2012 | 2010 | 23.38 | 23.38 | 34,824,621 | 0.00 | n/a | 141,459,257 | 141,459,257 |
| 2013 | 2011 | 28.77 | 28.77 | 34,523,315 | 0.00 | n/a | 121,631,362 | 121,631,362 |
| 2014 | 2012 | 27.09 | 27.09 | 34,189,288 | 0.00 | $ (94,382) | 125,003,023 | 125,857,903 |
| 2015 | 2013 | 26.95 | 27.50 | 33,985,523 | -0.55 | $ 143,801 | 125,857,903 | 126,639,423 |
| 2016 | 2014 | 27.03 | 27.50 | 33,175,307 | -0.47 | $ 183,649 | 126,639,423 | 123,414,560 |

*Summary of Actuarial Methods and Assumptions*

## NOTES TO SCHEDULE OF CONTRIBUTIONS

| | |
|---|---|
| **Valuation Date:** | June 30, 2014 |
| Notes | Actuarially determined contribution rates are calculated for the fiscal year beginning one year after the valuation date (one year lag). |

**Methods and Assumptions Used to Determine Contribution Rates:**

| | |
|---|---|
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Level Percentage of Payroll, Open |
| Remaining Amortization Period | 20 years |
| Asset Valuation Method | 5 Year smoothed market |
| Inflation | 3.00% |
| Salary Increases | 3.00% to 6.50% including inflation |
| Investment Rate of Return | 7.25% |
| Retirement Age | Age-based table of rates that are specific to the type of eligibility condition. Last updated for the 2009 valuation pursuant to an experience study of the period 2009 - 2013. |
| Mortality | Pre and Post-retirement: RP-2000 Combined Mortality Table for males and females projected with Scale BB to 2020.<br><br>Disabled retirement: RP-2000 Disabled Mortality Table for males and females. |

**Other Information:**

| | |
|---|---|
| Notes | There were no benefit changes during the year. |

## Supporting Schedules
## June 30, 2016
### Schedule of Administrative Expenses

| | | |
|---|---|---|
| **Personal Services** | | |
| Staff Salaries | $ | 233,171 |
| Fringe Benefits | | 125,278 |
| Total Personal Services | | 358,449 |
| **Professional Services** | | |
| Accounting | | 204,200 |
| Actuary | | 59,282 |
| Audit | | 23,845 |
| Physician Services | | 3,600 |
| Legal | | 34,403 |
| Total Professional Services | | 325,330 |
| **Other Administrative Expenses** | | |
| Computer Software Maint. & Hosting | | 36,510 |
| Insurance | | 29,160 |
| Other | | 13,356 |
| Postage | | 9,557 |
| Printing and Supplies | | 10,611 |
| Professional Development | | 3,055 |
| Total Other Administrative Expense | | 102,249 |
| **Total Administrative Expenses** | **$** | **786,028** |

### Schedule of Investment Services Expense

| | | |
|---|---|---|
| Trust & Custody | $ | 291,919 |
| Investment Consultant | | 204,435 |
| Investment Management | | 3,441,000 |
| **Total Investment Expenses** | **$** | **3,937,354** |

CITY OF

FOUNDED 1775

TUCSON

# INVESTMENT SECTION

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September 26, 2016

The Board of Trustees
Tucson Supplemental Retirement System
255 W. Alameda Street
Tucson, AZ 85701

Dear Board Members,

This letter reviews the general economic environment, capital markets and investment performance of the Tucson Supplemental Retirement System ("TSRS") for the fiscal year ended June 30, 2016.

**Economic Overview as of June 30, 2016**
There were several macro level events that created volatility in capital markets in the second half of calendar year 2015. Among these were fears of Greece exiting the E.U., unrest in the Middle East, a slowing Chinese economy, and oil prices that slid 34% over those six months. In December, spurred by positive jobs numbers and inflation figures, the Federal Open Market Committee (FOMC) moved off of its zero rate policy and increased the federal funds target range to 0.25%-0.50%. In the first half of 2016, as oil prices stabilized in mid-February, major global indices reversed course and began to climb. The FOMC chose not to raise rates further at their June 2016 meeting and cited weak business investment and a disappointing May jobs figure as the main reasons. Employers added an average of 175,000 positions to payrolls each month throughout the second half of the fiscal year, and the unemployment rate ended June at 4.9%, down from the July 2015 reading of 5.3%. June headline and core CPI rose 1.0% and 2.3% year-over-year, respectively.

U.S. GDP growth has been positive and modest over the last fiscal year. Based on the most recent estimate, quarterly annualized GDP growth for the second quarter 2016 was 1.1%. Mirroring the slow growth rate in the U.S., euro zone GDP rose 1.6% during the same time period.

As the calendar turned from 2015 to 2016, concerns about global growth were reaffirmed. Japan continued its quantitative easing tactics by reducing its benchmark interest rate to -0.1% in an attempt to stimulate its growth and capital markets. Japan and Germany became the second and third countries to issue negative yielding 10- year debt. In December, the European Central Bank announced a new stimulus package that investors found uninspiring. Despite these events, markets rallied in March and April but momentum stalled in late May when concerns regarding mediocre global growth compounded with anxiety about the June U.K. referendum vote choked the market's progress. The U.K. surprised the world on June 23rd by voting to exit the E.U., leading to a sharp selloff erasing two trillion dollars from global equity markets in a single day. The pound hit a 31-year low and the U.S. dollar rallied. Global markets recovered swiftly after the initial downturn reducing fears of a systemic event.

**Total Fund Review**
In fiscal year 2016, TSRS returned 2.38% before investment management fees, which ranked 10th percentile versus other public defined benefit plans. TSRS returned 1.89% net of fees for the fiscal year, which was above the benchmark return of 1.82%.

**Domestic Equity Overview**
The fiscal year ended June 30, 2016 brought positive yet muted returns across most of the domestic equity market. The Russell 3000 Index, a broad market indicator for the U.S. stock market, finished the fiscal year up 2.14%. Large cap stocks performed better than small cap stocks during the time period. The Russell 1000, a gauge of large cap stock performance, outperformed its small cap peer by a wide margin. The Russell 1000 rose 2.93% while the Russell 2000 returned -6.73%. Value stocks outperformed growth stocks. The Russell 3000 Value Index advanced 2.42% versus a gain of 1.88% for the Russell 3000 Growth Index.

Callan

Tucson Supplemental Retirement System
September 26, 2016

During the fiscal year ended June 30, 2016 the TSRS domestic equity investments returned 0.94% net of fees.

**International Equity Overview**
Developed International equity markets, as represented by the MSCI EAFE Index, suffered in fiscal year 2016. The index dropped 10.16%, lagging the -4.22% performance in fiscal year 2015. Growth fared better than Value in the international developed equity space. For the trailing twelve-months ended June 30, 2016, the MSCI EAFE Growth Index lost only 4.80% while the MSCI EAFE Value Index plummeted 15.43%. Emerging market returns trailed developed market returns for the fiscal year despite the emerging market rally the second quarter of the calendar year. The MSCI Emerging Markets Index dipped 12.05% over the trailing 12-months ended June 30, 2016. Overall, it was a lackluster year for international stock markets.

For the fiscal year of 2016, the international equity asset class returned -10.04% net of fees for TSRS.

**Domestic Fixed Income Overview**
The U.S. bond market, as measured by the Barclays Aggregate Bond Index, jumped 6.00% in fiscal year 2016. The yield curve shifted downward and flattened throughout the period, rewarding holders of longer duration bonds. The Barclays Government Index rose 6.04% over the 12-month period. Given the environment, the Barclays Government Long Index returned a generous 18.98%. The Barclays Credit Index rose 7.55% for the same time period as spreads compressed versus Treasuries. High yield bonds, despite a rally in the first six months of 2016, returned only 1.62% over the trailing 12-months (Barclays Corporate High Yield Index).

For the fiscal year 2016, TSRS' domestic fixed income investments returned 6.06% net of fees.

**Real Estate Overview**
The NCREIF Property Index, a measure of the private real estate market, gained 10.64% during the 2016 fiscal year. The index was positive in each of the four quarters, extending its winning streak to 26 straight quarters. The FTSE NAREIT Equity Index, a measure of the public securities real estate market, skyrocketed 24.04%.

During the year ended June 30, 2016 TSRS' real estate portfolio returned 9.64% net of fees.

**Infrastructure Overview**
By definition, infrastructure assets are essential to the economic health and productivity of civilized society. They include the basic facilities, services, and installations needed for the functioning of a community, such as transit and communications systems; both potable and sewage water lines; and electricity access. They also include such public entities as schools, post offices, and incarceration facilities. Most of these facilities have traditionally been owned and regulated by municipalities and states. The private sector's participation has been limited, to varying degrees, to the areas of design, construction, and operation. Budget and fiscal pressures limit the ability of public authorities to maintain existing infrastructure, much less to build the new facilities required by a growing population. In response to these problems, many municipalities and states have sold or are contemplating the sale of their infrastructure assets to private investors.

Over the Trailing 12-month period ended June 30, 2016, the infrastructure investment program for TSRS returned 12.30% net of fees.

The market values and performance stated in this CAFR letter are independently calculated based on financial statements from the Plan's custodian. The statements are believed to be reliable and accurate. Performance is calculated using either a daily time weighted rate of return methodology or modified Bank Administration Institute methodology based upon the frequency and availability of security pricing.

Cordially,

Paul Erlendson
Senior Vice President

Gordon Weightman, CFA
Vice President

## Outline of Investment Policies

The asset allocation policy includes a 59% allocation to equity securities: 26% to large U.S. stocks; split among S&P 500 index, enhanced index, large capitalization growth and value accounts; 8% to mid-cap and small-cap U.S. stock accounts; and 25% to foreign stock accounts. There is also an allocation of 27% to fixed income, 9% to equity real estate and 5% to infrastructure.

The Board has set an asset allocation target range on each asset class, sub-class, and manager. The Board of Trustees has adopted a policy of rebalancing the portfolio when the actual allocation falls above or below the target range.

Over the long term, asset allocation policy will be the primary determinant of the returns generated by the TSRS pension fund and the associated volatility of returns. In particular, the level of equity exposure is the key element within the TSRS pension investment policies.

In developing asset allocation policies for its pension plan, the Board examined asset and liability projections to evaluate possible results over the next ten years. These projections examined the risk/return tradeoffs of alternative asset classes, as well as alternative levels of equity exposure. Through incorporating the results of these projections with its risk posture, as well as considering typical practices and practical investment issues, the Board has developed the following asset mix guidelines:

| | **Percent of Total Pension Fund** | | |
|---|---|---|---|
| | **Minimum** | **Target** | **Maximum** |
| **Equities**: | | | |
| Large Capitalization | 21% | 26% | 31% |
| Small/Mid Capitalization | 4% | 8% | 12% |
| International | 20% | 25% | 30% |
| **Total Equities** | **54%** | **59%** | **64%** |
| **Fixed Income** | **22%** | **27%** | **32%** |
| **Real Estate** | **7%** | **9%** | **11%** |
| **Infrastructure** | **3%** | **5%** | **7%** |

Separate target ranges are also set for each investment manager within an asset class and are monitored in conjunction with the overall asset allocation. TSRS monitors its asset mix and rebalances its portfolio mix at any time that a primary asset class (i.e., equities, fixed-income, and real estate), secondary asset class (i.e., domestic equities, international equities), portfolio style, or manager reaches the minimum or maximum allocation specified. Staff is authorized to direct rebalancing and report to the Board.

## Investment Objectives

Total Pension Fund Performance Objectives:[1]

The TSRS Pension Fund's return will be, in part, a function of the capital market environment in which the plan's investment managers operate. Therefore, regardless of whether or not the market environment permits the achievement of substantial real returns, the TSRS expects any active investment managers that it retains to produce results that are above average relative to other actively-managed funds and relative to passive alternatives. Investment managers should cover the fees paid and provide a return increment that justifies the risk assumed in active management.

On a rolling three-year basis, the annualized total return of the portfolio should exceed the annualized total return of the following custom index:

- Standard & Poor's 500 Stock Index (26% weight)
- Russell 2500 Stock Index (8% weight)
- MSCI All Country World, ex-U.S. Investable Market Index (25% weight)
- Barclays Capital Aggregate Bond Index (27% weight)
- NCREIF ODCE Real Estate Index (9% weight)
- CPI + 4% (5% weight)

[1] The investment objectives defined herein assume that performance comparisons will be based on a before-fee analysis, unless otherwise indicated.

## Individual Managers Performance Objectives

On a rolling three-year basis, the annualized total return earned by an actively managed portfolio should place the account in a competitive ranking (i.e., top 40%) relative to a peer group of managers. In addition, the managers should outperform the following market index benchmarks:

*T. Rowe Price (Large Cap Growth Equity)*
- Exceed the annualized total return of the Russell 1000 Growth Index

*BlackRock Value (Russell 1000 Value Index)*
- Match the annualized total return of the Russell 1000 Value Index

*Alliance Capital (S&P 500 Index)*
- Match the annualized total return of the S&P 500 Index

*PIMCO StocksPlus (Enhanced Index)*
- Exceed the annualized total return of the S&P 500 Index

*Champlain Investment Partners (Mid Cap Core Equity)*
- Exceed the annualized total return of the Russell Mid Cap Index

*Fidelity Institutional Asset Management (Small Cap Equity)*[1]
- Exceed the annualized total return of the Russell 2000 Stock Index

*Aberdeen Asset Management (International Core Equity)*
- Exceed the annualized total return of the MSCI AC World ex-U.S. Index

*Causeway Capital Management (International Value Equity)*
- Exceed the annualized total return of the MSCI AC World ex-U.S. Index

*American Century Investments (International Small Cap)*
- Exceed the annualized total return of the MSCI AC World ex-U.S. Small Cap Index

*PIMCO (Custom Fixed Income)*
- Exceed the annualized total return of a customized fixed income benchmark composed of 25% BC Mortgage, 25% BC Credit, 25% BC High Yield and 25% JP Morgan EMBI index

*BlackRock U.S. Debt Index Fund (U.S. Investment Grade Fixed Income)*
- Match the annualized total return of the BC Aggregate Bond Index

*JP Morgan Strategic Property Fund (Core Real Estate)*
- Exceed the annualized total return of the NCREIF ODCE Real Estate Index

*JP Morgan Income & Growth Fund (Value Added Real Estate)*
- Exceed the annualized total return of the NCREIF ODCE Real Estate Index

*Macquarie European Infrastructure Fund 3 (European Infrastructure)*
- Exceed the annualized total return of the CPI + 4%

*SteelRiver Infrastructure Fund North America (North America Infrastructure)*
- Exceed the annualized total return of the CPI + 4%

[1] This Manager was formerly known as Pyramis Global Advisors

## Investment Results by Year
## Last Ten Fiscal Years Ended June 30, 2016

| Year Ended | Annual Return | 3-Year Annualized Return | 5-Year Annualized Return | 10-Year Annualized Return |
|---|---|---|---|---|
| 6/30/16 | 2.3% | 8.1% | 8.0% | 5.7% |
| 6/30/15 | 4.6% | 12.9% | 12.6% | 7.1% |
| 6/30/14 | 19.6% | 12.1% | 14.1% | 7.5% |
| 6/30/13 | 14.8% | 13.2% | 5.0% | 7.4% |
| 6/30/12 | 2.4% | 12.1% | 1.2% | 6.2% |
| 6/30/11 | 23.2% | 2.8% | 4.0% | 5.1% |
| 6/30/10 | 11.6% | -5.6% | 1.8% | 2.1% |
| 6/30/09 | -21.0% | -4.1% | 1.3% | 2.0% |
| 6/30/08 | -4.6% | 7.3% | 9.8% | 5.5% |
| 6/30/07 | 17.2% | 12.3% | 11.5% | 7.8% |

Note: The above returns represent geometrically compounded, time-weighted rates of return reported gross of fees.

## Schedule of Investment Results
## For Periods Ended June 30, 2016

| | | Annualized Returns (1) | |
|---|---|---|---|
| | One Year | Three Years | Five Years |
| **TOTAL PORTFOLIO** | | | |
| TSRS | 2.33% | 8.13% | 8.01% |
| Custom Benchmark (2) | 1.82% | 7.51% | 7.64% |
| | | | |
| **EQUITY FUNDS** | | | |
| Alliance S&P 500 Index | 3.93% | 11.58% | 12.02% |
| S & P 500 Index | 3.99% | 11.66% | 12.10% |
| | | | |
| PIMCO StocksPlus | 2.68% | 12.12% | 13.00% |
| S & P 500 Index | 3.99% | 11.66% | 12.10% |
| | | | |
| BlackRock Russell 1000 Value Index | 2.71% | 9.88% | 11.38% |
| Russell 1000 Value Index | 2.86% | 9.87% | 11.35% |
| | | | |
| T. Rowe Price Large Cap Growth (Inception date: 2/12) | -3.13% | 12.74% | 12.43% |
| Russell 1000 Growth Index | 3.02% | 13.07% | 12.35% |
| | | | |
| Champlain Investment Partners (Inception date: 7/10) | 3.76% | 12.40% | 11.57% |
| Russell Mid Cap Index | 0.56% | 10.80% | 10.90% |
| | | | |
| Fidelity Insitutional Asset Management Small Cap | -5.10% | 9.98% | 11.30% |
| Russell 2000 Index | -6.73% | 7.09% | 8.35% |
| | | | |
| Causeway International Value Equity | -12.24% | 1.54% | 2.37% |
| MSCI EAFE Index | -9.42% | 2.35% | 1.85% |
| | | | |
| Aberdeen EAFE Plus Equity (Inception date: 4/12) | -8.32% | -1.42% | 0.16% |
| MSCI All Country World ex-U.S. Index (Net) | -10.24% | 1.16% | 0.10% |
| | | | |
| American Century Non U.S. Small Cap (Inception date: 5/16) (4) | N/A | N/A | N/A |
| MSCI All Country World ex-U.S. Small Cap | N/A | N/A | N/A |
| | | | |
| **FIXED INCOME FUNDS** | | | |
| BlackRock U.S. Debt Fund (Inception date: 1/12) | 6.09% | 4.15% | 3.87% |
| Barclays Aggregate Bond Index | 6.00% | 4.06% | 3.76% |
| | | | |
| PIMCO Custom Fixed Income | 6.04% | 4.82% | 5.25% |
| Custom Index (3) | 7.28% | 5.45% | 5.27% |
| | | | |
| **REAL ESTATE FUNDS** | | | |
| JP Morgan Strategic Property Fund | 10.02% | 11.75% | 11.82% |
| NCREIF ODCE Index | 11.24% | 12.08% | 11.70% |
| | | | |
| JP Morgan Income and Growth Fund | 8.69% | 11.09% | 14.56% |
| NCREIF ODCE Index | 11.24% | 12.08% | 11.70% |

Notes: All data provided by independent investment consultant, Callan Associates Inc.
(1) Geometrically compounded, time-weighted rates of return (all returns reported gross of fees)
(2) Custom Benchmark = 36% S&P 500 Index + 10% Russell 2500 + 15% MSCI ACWI ex-U.S (Net) + 26% Barclays Capital Aggregate + 8% NCREIF ODCE + 5% CPI+4%
(3) Custom Index = 25% Barclays Capital Mortgage + 25% Barclays Capital Credit + 25% Barclays Capital High Yield + 25% JP Morgan EMBI Global
(4) As the American Century Non-U.S. Small Mid Cap Strategy was funded in May of 2016 the one year and annualized return data is not yet available.

## Schedule of Investment Results
## For Periods Ended June 30, 2016 (Continued)

| | | Annualized Returns (1) | |
|---|---|---|---|
| | One Year | Three Years | Five Years |
| **INFRASTRUCTURE FUNDS** | | | |
| Macquarie European Infrastructure Fund 3 (Funding Completed) | 6.82% | 2.92% | 3.70% |
| CPI + 4% | 4.65% | 4.77% | 5.13% |
| SteelRiver Infrastructure Fund North America (Funding in progres | 17.13% | 12.71% | 7.57% |
| CPI + 4% | 4.65% | 4.77% | 5.13% |

Notes: All data provided by independent investment consultant, Callan Associates Inc.
(1) Geometrically compounded, time-weighted rates of return (all returns reported gross of fees)

# Asset Summary
## By Manager and Type of Investment (in thousands)
## June 30, 2016

| Manager | Style | Large U.S. Stocks | Small/Mid U.S. Stocks | Foreign Stocks | Fixed Income | Real Estate | Infra-structure | Short Term | Total |
|---|---|---|---|---|---|---|---|---|---|
| Alliance Capital | S & P 500 Index | $ 55,432 | $ - | $ - | $ - | $ - | $ - | $ 81 | $ 55,513 |
| T. Rowe Price | Large Cap Growth | 49,626 | - | - | - | - | - | 286 | 49,912 |
| BlackRock Russell Value | Large Cap Value Index | 51,094 | - | - | - | - | - | - | 51,094 |
| PIMCO StocksPlus | Enhanced Index | 29,162 | - | - | - | - | - | - | 29,162 |
| Champlain Investments | Mid-Cap Core | - | 28,452 | - | - | - | - | 1,030 | 29,482 |
| Fidelity Institutional Asset Mgmt. | Small-Cap Core | - | 28,964 | 115 | - | - | - | 326 | 29,405 |
| Causeway Capital | Foreign Stocks-Value | - | - | 65,149 | - | - | - | 2,218 | 67,367 |
| Aberdeen Asset Mgmt | Foreign Stocks-Core | - | - | 70,125 | - | - | - | - | 70,125 |
| American Century Investments | Foreign Stocks-Small Cap | - | - | 32,572 | - | - | - | - | 32,572 |
| BlackRock U.S. Debt | U.S. Govt/Credit Bonds | - | - | - | 71,999 | - | - | - | 71,999 |
| PIMCO Custom Fixed Income | U.S. & Foreign Bonds | - | - | - | 99,643 | - | - | 20,966 | 120,609 |
| JPM Strategic Property Fund | Core Real Estate | - | - | - | - | 46,510 | - | - | 46,510 |
| JPM Income & Growth Fund | Value Added Real Estate | - | - | - | - | 17,678 | - | - | 17,678 |
| Macquarie (MEIF3) | European Infrastructure | - | - | - | - | - | 23,137 | - | 23,137 |
| SteelRiver IFNA | North American Infrastructure | - | - | - | - | - | 25,738 | - | 25,738 |
| Liquidity Fund | Cash & Cash Equivalents | - | - | - | - | - | - | 2,067 | 2,067 |
| | **TOTAL** | $ 185,314 | $ 57,416 | $ 167,961 | $ 171,642 | $ 64,188 | $ 48,875 | $ 26,974 | $ 722,370 |

***Notes:***

*(1) The Asset Summary does not include the City pooled investment account. (2) Assets are reflected on a trade date basis. (3) Short-term investments have been adjusted for the net impact of unsettled transactions in order to report on a trade date basis. (4) Each asset class includes receivables and payables.*

## Manager and Asset Diversification (in thousands)
## June 30, 2016

| | Actual | | Target | |
|---|---|---|---|---|
| **Manager** | **Amount** | **Percentage** | **Amount** | **Percentage** |
| Alliance Capital | $ 55,513 | 7.7% | $ 50,566 | 7.0% |
| T. Rowe Price | 49,912 | 6.9% | 50,566 | 7.0% |
| BlackRock Russell Value | 51,094 | 7.1% | 57,790 | 8.0% |
| PIMCO StocksPlus | 29,162 | 4.0% | 28,894 | 4.0% |
| **Large U.S. Stocks** | **185,681** | **25.7%** | **187,816** | **26.0%** |
| Champlain Investment Partners | 29,482 | 4.1% | 28,895 | 4.0% |
| Fidelity Institutional Asset Mgmt. | 29,405 | 4.1% | 28,895 | 4.0% |
| **Small/Mid-Cap U.S. Stocks** | **58,887** | **8.2%** | **57,790** | **8.0%** |
| Causeway Capital | 67,367 | 9.3% | 72,237 | 10.0% |
| Aberdeen Asset Management | 70,125 | 9.7% | 72,237 | 10.0% |
| American Century Investments | 32,572 | 4.5% | 36,119 | 5.0% |
| **Foreign (International) Stocks** | **170,064** | **23.5%** | **180,593** | **25.0%** |
| **Total Equities** | **414,632** | **57.4%** | **426,199** | **59.0%** |
| BlackRock U.S. Debt | 71,999 | 10.0% | 122,802 | 17.0% |
| PIMCO Custom Fixed Income | 120,609 | 16.7% | 72,237 | 10.0% |
| **Fixed Income (Bonds)** | **192,608** | **26.7%** | **195,039** | **27.0%** |
| JPM Strategic Property Fund | 46,510 | 6.4% | 43,342 | 6.0% |
| JPM Income & Growth Fund | 17,678 | 2.4% | 21,671 | 3.0% |
| **Real Estate** | **64,188** | **8.8%** | **65,013** | **9.0%** |
| Macquarie (MEIF3) | 23,137 | 3.2% | 18,059 | 2.5% |
| SteelRiver IFNA | 25,738 | 3.6% | 18,060 | 2.5% |
| **Infrastructure** | **48,875** | **6.8%** | **36,119** | **5.0%** |
| Liquidity Fund | 2,067 | 0.3% | - | 0.0% |
| **Total** | **$ 722,370** | **100%** | **$ 722,370** | **100%** |

## Asset Allocation by Asset Class
## Last Five Fiscal Years

| Asset Class | 2016 | 2015 | 2014 | 2013 | 2012 |
|---|---|---|---|---|---|
| U.S. Stocks | 34% | 51% | 50% | 48% | 46% |
| Foreign (International) Stocks | 23% | 13% | 14% | 14% | 13% |
| Total Equities | 57% | 64% | 64% | 62% | 59% |
| Fixed Income (Bonds) | 27% | 22% | 22% | 24% | 26% |
| Real Estate | 9% | 8% | 8% | 8% | 8% |
| Infrastructure | 7% | 6% | 6% | 6% | 7% |
| Cash | 0% | 0% | 0% | 0% | 0% |
| | 100% | 100% | 100% | 100% | 100% |

## Ten Largest Bond Holdings
## (By Market Value)
## June 30, 2016
(dollars in thousands)

| Par Value | Bond | Coupon Rate | Due | Rating (1) | Fair Value |
|---|---|---|---|---|---|
| $ 1,250 | UBS AG/Samford CT | 7.625% | 08/17/22 | Baa1 | 1,416 |
| 1,200 | Rockies Express Pipeline 144A | 6.850% | 07/15/18 | Ba2 | 1,245 |
| 1,300 | Petrobras Global Finanace BV | 5.375% | 01/27/21 | B3 | 1,191 |
| 1,100 | Columbia Government International | 5.000% | 06/15/45 | Baa2 | 1,141 |
| 1,100 | Petroleos Mexicanos Regs | 2.750% | 04/21/17 | Baa3 | 1,019 |
| 1,000 | International Lease Finance 144A | 6.750% | 09/01/16 | Baa3 | 1,005 |
| 900 | HCA Inc. | 6.500% | 02/15/20 | Ba1 | 996 |
| 1,000 | Heta asset Resolution AG | 4.375% | 12/31/23 | Ca | 949 |
| 800 | Bank of America Corp | 4.000% | 4/01/204 | Baa1 | 854 |
| 800 | Credit Suisse AG 114A | 6.500% | 08/08/23 | Baa1 | 836 |

(1) Per Moody's Investors Service, Inc.

## Ten Largest Stock Holdings
## (By Market Value)
## June 30, 2016
(dollars in thousands)

| Shares | Stock | Fair Value |
|---|---|---|
| 7,095 | Amazon.com Inc. | $ 5,077 |
| 24,446 | Facebook Inc. | 2,794 |
| 3,642 | Alphabet Inc-CL A | 2,562 |
| 49,918 | Microsoft Corp | 2,554 |
| 1,986 | Priceline Group Inc. | 2,479 |
| 30,490 | Visa Inc. | 2,261 |
| 34,140 | British American Tobacco PLC | 2,210 |
| 21,220 | Danaher Corp | 2,143 |
| 21,872 | Apple Inc. | 2,091 |
| 68,100 | KDDI Corp | 2,066 |

*A complete list of portfolio holdings is available by contacting the City of Tucson, Treasury Division, 255 W. Alameda Street, 5 West, Tucson, AZ 85701-1303*

# Schedule of Fees
## June 30, 2016

| | | Assets Under Management | | Fees | |
|---|---|---|---|---|---|
| **Investment Manager Fees** | | | | | |
| *Fixed Income Managers* | | | | | |
| BlackRock U.S. Debt | $ | 71,998,584 | $ | 35,221 | |
| PIMCO (Custom Fixed Income) | | 120,610,311 | | 491,481 | |
| Total Fixed Income | $ | 192,608,895 | $ | 526,702 | |
| *Equity Managers* | | | | | |
| Alliance Capital Management | $ | 55,513,281 | $ | 33,331 | |
| BlackRock Russell Value Index | | 51,094,305 | | 27,677 | |
| T. Rowe Price | | 49,911,562 | | 345,033 | |
| Causeway Capital Management | | 67,366,787 | | 340,637 | |
| Fidelity Institutional Asset Management | | 29,405,121 | | 279,281 | |
| Aberdeen Asset Management | | 70,125,135 | | 335,469 | |
| American Century Investments | | 32,571,810 | | 32,447 | |
| PIMCO StocksPlus | | 29,161,575 | | - | (1) |
| Champlain Investment Partners | | 29,481,575 | | 326,842 | |
| Total Equity | $ | 414,631,151 | $ | 1,720,717 | |
| Liquidity Account | | 2,066,639 | | - | |
| *Real Estate Managers* | | | | | |
| JPM Strategic Property Fund | $ | 46,510,048 | $ | 449,675 | |
| JPM Income & Growth Fund | | 17,678,315 | | 218,938 | |
| Total Real Estate | $ | 64,188,363 | $ | 668,613 | |
| *Infrastructure Managers* | | | | | |
| Macquarie (MEIF3) | $ | 23,137,016 | $ | 179,411 | |
| SteelRiver IFNA | | 25,738,433 | | 185,888 | |
| Total Infrastructure | $ | 48,875,449 | $ | 365,299 | |
| **Total Assets (Trade date basis)** | **$** | **722,370,497** | | | |
| **Total Investment Management Fees** | | | **$** | **3,281,331** | |
| **Other Investment Service Fees** | | | | | |
| *Trust & Custodian Fees* | | | | | |
| BNY Mellon | | | $ | 291,919 | |
| *Security Lending - Bank & Administration Fees* | | | | | |
| BNY Mellon | | | | 59,201 | |
| *Consulting & Performance Management* | | | | | |
| Callan Associates Inc. | | | | 204,435 | |
| *Portfolio Restructre Fees* | | | | | |
| BlackRock Institutional Trust Company, N.A. | | | | 159,669 | |
| **Total Other Investment Service Fees** | | | **$** | **715,224** | |

(1) For the twelve month period ending June 30, 2016, the PIMCO StocksPLUS LP B Fund underperformed the S&P 500 . As a result, this strategy did not generate management fees for that strategy this fiscal year.

# Schedule of Commissions
## June 30, 2016

| Broker Description | Shares | Commissions | Commissions Per Share |
|---|---|---|---|
| CREDIT SUISSE, NEW YORK (CSUS) | 1,819,651 | $ 19,944 | $ 0.0110 |
| MERRILL LYNCH INTL LONDON EQUITIES | 2,630,113 | 11,470 | 0.0044 |
| MORGAN STANLEY & CO INC, NY | 448,206 | 8,305 | 0.0185 |
| GOLDMAN SACHS & CO, NY | 295,939 | 5,276 | 0.0178 |
| UBS WARBURG, LONDON | 269,233 | 4,352 | 0.0162 |
| J.P. MORGAN CLEARING CORP, NEW YORK | 188,002 | 3,616 | 0.0192 |
| BARCLAYS CAPITAL, LONDON (BARCGB33) | 116,508 | 3,507 | 0.0301 |
| DEUTSCHE BK SECS INC, NY (NWSCUS33) | 128,350 | 3,265 | 0.0254 |
| RBC CAPITAL MARKETS LLC, NEW YORK | 238,129 | 3,129 | 0.0131 |
| STIFEL NICOLAUS | 107,979 | 3,107 | 0.0288 |
| MERRILL LYNCH PIERCE FENNER SMITH INC NY | 154,906 | 2,975 | 0.0192 |
| JEFFERIES & CO INC, NEW YORK | 142,261 | 2,971 | 0.0209 |
| INVESTMENT TECHNOLOGY GROUP, NEW YORK | 99,016 | 2,447 | 0.0247 |
| CITIGROUP GBL MKTS INC, NEW YORK | 122,152 | 2,430 | 0.0199 |
| LIQUIDNET INC, NEW YORK | 89,220 | 2,230 | 0.0250 |
| UBS SECURITIES LLC, STAMFORD | 120,613 | 2,002 | 0.0166 |
| UBS WARBURG ASIA LTD, HONG KONG | 94,587 | 1,944 | 0.0206 |
| CITIGROUP GLOBAL MARKETS LTD, LONDON | 124,367 | 1,919 | 0.0154 |
| INSTINET EUROPE LIMITED, LONDON | 73,667 | 1,596 | 0.0217 |
| BARCLAYS CAPITAL LE, JERSEY CITY | 109,240 | 1,356 | 0.0124 |
| BAIRD, ROBERT W & CO INC, MILWAUKEE | 36,284 | 1,276 | 0.0352 |
| J P MORGAN SECS LTD, LONDON | 76,621 | 1,249 | 0.0163 |
| LIQUIDNET INC, BROOKLYN | 49,200 | 1,230 | 0.0250 |
| WILLIAM BLAIR & CO, CHICAGO | 32,117 | 1,204 | 0.0375 |
| S G WARBURG, SEOUL | 3,765 | 1,118 | 0.2969 |
| STATE STREET BROKERAGE SVCS, BOSTON | 55,364 | 1,063 | 0.0192 |
| GOLDMAN SACHS EXECUTION & CLEARING, NY | 63,723 | 1,034 | 0.0162 |
| RAYMOND JAMES & ASSOC INC, ST PETERSBURG | 30,000 | 1,028 | 0.0343 |
| VARIOUS BROKERS - LESS THAN $1000 | 1,386,946 | 22,762 | |
| **TOTAL** | **9,106,159** | **$ 119,805** | |
| **AVERAGE COMMISSION RATE** | | | **$ 0.0132** |

CITY OF

FOUNDED 1775

TUCSON

# ACTUARIAL SECTION

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries
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Denver, CO 80237-2746
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October 5, 2016

The Board of Trustees

Tucson Supplemental Retirement System
Tucson, Arizona

**Re: June 30, 2016 Actuarial Valuation and CAFR information**

Dear Board Members:

The purpose of this letter is to provide the certification related to materials presented in the Comprehensive Annual Financial Report (CAFR) for the City of Tucson Supplemental Retirement System (TSRS).

***Actuarial Valuation Used for Funding Purposes***

The valuation report presents the results of the June 30, 2016 actuarial valuation of the Tucson Supplemental Retirement System. The report describes the current actuarial condition of the Tucson Supplemental Retirement System, determines recommended annual employer and employee contribution rates, and analyzes changes in these required rates. This report should not be relied on for any purpose other than the purpose described in the primary communication. Please refer to that report for any information concerning the funding, assumptions and methods of the TSRS.

***Certification***

The valuation report includes the following exhibits which provide further related information necessary to complete your annual financial report:

- Summary of Actuarial Assumptions and Methods
- Schedule of Active Members Counts by Age and Service
- Schedule of Funding Progress
- Schedule of Employer Contributions
- Solvency Test
- Comparative Schedule of Annual Pension Benefits Paid
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls
- Summary of Benefit Provisions

The schedules which are required to contain 10 years' worth of information will be completed with each passing year.

We certify that the information included herein and contained in the June 30, 2016 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the Tucson Supplemental Retirement System as of the valuation date.

The TSRS Board is responsible for establishing the funding policy, and an outline of that policy can be found in the appendix of the June 30, 2016 actuarial valuation report. The actuarial methods and assumptions used in the valuation are adopted by the TSRS Board based upon experience studies and in consideration of the recommendations of the TSRS' actuary. The actuarial assumptions and methods employed in the funding valuation are the same as those used for financial reporting purposes under GASB 67 and GASB 68.

The Board of Trustees
November 2, 2016
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***Contribution Rates***

There are no recommended changes to the contribution rates for FY 2018. Based on the TSRS funding policy, the recommended employer rate will remain at 27.5%, and the recommended employee rates by tier will remain at 5.00%, 6.75% and 5.25%. Full details of these calculations are in the June 30, 2016 actuarial valuation report.

The contribution rate in the June 30, 2016 actuarial valuation report is determined using the actuarial assumptions and methods disclosed in Section G of the valuation report. The report does not include an assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the System's financial condition.

***Financing Objectives***

The employer contributions, when combined with the contributions made by members, are intended to cover the Actuarially Determined Contribution (ADC)), which is the sum of the Normal Cost and expenses, plus a 20-year open level percent-of-pay amortization payment of the Unfunded Actuarial Accrued Liability (UAAL). The ADC is then rounded up in accordance with the Board's rounding policy. Based on this funding policy, the System is projected to reach full funding in 2035. Contributions less than the ADC will extend the period to attain full funding.

***Benefit Provisions***

All of the benefit provisions reflected in the June 30, 2016 actuarial valuation are those which were in effect on June 30, 2016. There were no changes to the benefit provisions since the prior valuation. The benefit provisions are summarized in Section D of the valuation Report.

***Assumptions and Methods***

There were no changes in actuarial methods and assumptions since the prior report. The Board has sole authority to determine the actuarial assumptions used for the Plan.

The mortality tables include projection to 2020 to provide margin for future mortality improvement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The actuarial calculations presented in this Report are intended to provide information for rational decision making.

***Data***

The valuation was based upon information as of June 30, 2016, furnished by Tucson Supplemental Retirement System staff, concerning Plan benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by Tucson Supplemental Retirement System staff.

The Board of Trustees
November 2, 2016
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***Actuarial reports used for GASB 67 and GASB 68 reporting***

For the GASB 67 and GASB 68 reporting purposes, the valuation date, measurement date of the Net Pension Liability and the reporting date are all June 30, 2016. Please refer to the Tucson Supplemental Retirement System GASB Statement Nos. 67 and 68 Accounting and financial reporting for pensions - June 30 2016- report for further information on the financial reporting.

We prepared the following scheduled for inclusion in the Financial Section of the TSRS CAFR:

Schedule of Changes in Net Pension Liability and Related Ratios

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

Schedule of Contributions

Compliance with ASOPs and Qualification Standards

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code, and ERISA.

The signing actuaries are independent of the plan sponsor. Leslie Thompson and Dana Woolfrey are Enrolled Actuaries and are Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, both of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,

**Gabriel, Roeder, Smith & Company**

Leslie L Thompson

Leslie Thompson, FSA, FCA, EA, MAAA Senior Consultant

Dana Woolfrey

Dana Woolfrey, FSA, FCA, EA, MAAA Consultant

## SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

I. Valuation Date

The valuation date is July 1st of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and
(ii) a rate that will amortize the unfunded actuarial liability.

1. The valuation is prepared on the projected benefit basis. The present value of each participant's expected benefit payable at retirement or termination is determined, based on age, service, sex, compensation, and the interest rate assumed to be earned in the future (7.25%). The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.

2. The employer contributions required to support the benefits of the Plan are determined following a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.

3. The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his anticipated covered service, would be required in addition to the contributions of the participant to meet the cost of all benefits payable on their behalf. Effective July 1, 2013 the TSRS funding policy requires the computation of normal cost separately for those members in Tier 1 and Tier 2 (the variable rate tiers).

4. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 20 years from the valuation date as a level percentage of pay. It is assumed that payments are made throughout the year.

5. Administrative expenses for the recent year will be added to the employer

normal cost in the current valuation and will be reflected in the recommended employer rate for the upcoming fiscal year.

III. Actuarial Value of Assets

The actuarial value of assets is based on recognizing gains and losses over a five-year period where gains and losses are determined by comparing the projected market value return (based on the prior year's market value of assets, cash flows during the year and expected investment returns on those amounts) to the actual market investment return.

IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.25% per annum, compounded annually, composed of an assumed 3.00% inflation rate and a 4.25% real rate of return. This rate represents the assumed return, net of all investment expenses.

2. Salary increase rate:

| Sample Attained Age | Percentage Increase in Salary with Less than Five Years of Service | | |
|---|---|---|---|
| | Merit | Inflation | Total |
| 0 | 3.50 % | 3.00 % | 6.50 % |
| 1 | 3.00 | 3.00 | 6.00 |
| 2 | 2.50 | 3.00 | 5.50 |
| 3 | 2.00 | 3.00 | 5.00 |
| 4 | 1.50 | 3.00 | 4.50 |

| Sample Attained Age | Percentage Increase in Salary with Five or More Years of Service | | |
|---|---|---|---|
| | Merit | Inflation | Total |
| 25 | 1.50 % | 3.00 % | 4.50 % |
| 30 | 1.50 | 3.00 | 4.50 |
| 35 | 1.50 | 3.00 | 4.50 |
| 40 | 1.00 | 3.00 | 4.00 |
| 45 | 0.50 | 3.00 | 3.50 |
| 50 | 0.25 | 3.00 | 3.25 |
| 55 | 0.25 | 3.00 | 3.25 |
| 60 | 0.25 | 3.00 | 3.25 |
| 65 | 0.00 | 3.00 | 3.00 |

3. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 3.00% per year. This increase rate is primarily due to the effect of inflation on salaries, with no allowance for future membership growth.

B. Demographic Assumptions

1. Mortality rates (pre- and post-retirement) – RP-2000 Combined Mortality Table for males and females projected with Scale BB to 2020. Mortality rates were adjusted to include margin for future mortality improvement as described in the table name above.

2. Mortality rates (post-disablement) – RP-2000 Disabled Mortality Table for males and females.

| Sample Attained Ages | Probability of Death Pre- and Post-Retirement | |
|---|---|---|
| | Men | Women |
| 20 | 0.03 % | 0.02 % |
| 25 | 0.04 | 0.02 |
| 30 | 0.04 | 0.02 |
| 35 | 0.07 | 0.04 |
| 40 | 0.10 | 0.07 |
| 45 | 0.14 | 0.11 |
| 50 | 0.20 | 0.16 |
| 55 | 0.34 | 0.25 |
| 60 | 0.59 | 0.41 |
| 65 | 1.00 | 0.76 |
| 70 | 1.64 | 1.32 |
| 75 | 2.80 | 2.21 |
| 80 | 4.76 | 3.60 |
| 85 | 8.19 | 6.08 |
| 90 | 14.70 | 10.55 |

| Sample Attained Ages | Probability of Death Post-Disability | |
|---|---|---|
| | Men | Women |
| 20 | 2.26 % | 0.75 % |
| 25 | 2.26 | 0.75 |
| 30 | 2.26 | 0.75 |
| 35 | 2.26 | 0.75 |
| 40 | 2.26 | 0.75 |
| 45 | 2.26 | 0.75 |
| 50 | 2.90 | 1.15 |
| 55 | 3.54 | 1.65 |
| 60 | 4.20 | 2.18 |
| 65 | 5.02 | 2.80 |
| 70 | 6.26 | 3.76 |
| 75 | 8.21 | 5.22 |
| 80 | 10.94 | 7.23 |
| 85 | 14.16 | 10.02 |
| 90 | 18.34 | 14.00 |

3. Disability rates. Sample rates shown below:

| Sample Attained Ages | Probability of Disablement Next Year | |
|---|---|---|
| | Men | Women |
| 25 | 0.01 % | 0.01 % |
| 30 | 0.07 | 0.07 |
| 35 | 0.09 | 0.09 |
| 40 | 0.14 | 0.14 |
| 45 | 0.17 | 0.17 |
| 50 | 0.25 | 0.25 |
| 55 | 0.36 | 0.36 |
| 60 | 0.48 | 0.48 |

4. Termination rates (for causes other than death, disability or retirement): Termination rates are based on service and age. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates are shown:

| Sample Attained Age | Years of Credible Service | Probability of Termination |
|---|---|---|
| Any | 0 | 18.00 % |
| | 1 | 13.00 |
| | 2 | 10.00 |
| | 3 | 8.00 |
| | 4 | 7.50 |
| 20 | 5 & over | 7.05 |
| 25 | | 7.05 |
| 30 | | 6.65 |
| 35 | | 4.65 |
| 40 | | 3.65 |
| 45 | | 2.95 |
| 50 | | 2.55 |
| 55 | | 2.45 |

5. Forfeiture rates: The percentages below represent the probability that a vested terminated member will take a refund of contributions rather than receive a deferred annuity benefit.

| **Sample Ages** | **% of Vested Terminating Members Choosing Refund at Termination** |
|---|---|
| Under 30 | 50 % |
| 30 | 45 |
| 35 | 40 |
| 40 | 35 |
| 45 | 30 |
| 50 | 25 |
| 55 | 20 |
| 60 and Over | 0 |

6. Retirement rates for Tier 1. For those ages 62+, the Rule of 80 retirement rates only applies if the Rule of 80 is attained by age 62.

| Attained Age | Tier 1 Members Percentage of Those Eligible Retiring During the Year | | |
|---|---|---|---|
| | Rule of 80 | Age Based | Early |
| 50-54 | 27.0 % | | |
| 55-59 | 27.0 | | 8.5 % |
| 60 | 27.0 | | |
| 61 | 27.0 | | |
| 62 | 27.0 | 33.0 % | |
| 63 | 27.0 | 16.0 | |
| 64 | 27.0 | 20.0 | |
| 65 | 27.0 | 24.0 | |
| 66-69 | 27.0 | 35.0 | |
| 70 & Over | 100.0 | 100.0 | |

Retirement rates for Tier 2. For those ages 65+, the Rule of 85 retirement rates only applies if the Rule of 85 is attained by age 65.

| Attained Age | Tier 2 Members<br>Percentage of Those Eligible Retiring During the Year | | |
|---|---|---|---|
| | Rule of 80 | Age Based | Early |
| 60 | 27.0 % | | 8.5 % |
| 61 | 27.0 | | 8.5 |
| 62 | 27.0 | | 8.5 |
| 63 | 27.0 | | 8.5 |
| 64 | 27.0 | | 8.5 |
| 65 | 27.0 | 24.0 % | |
| 66-69 | 27.0 | 35.0 | |
| 70 & Over | 100.0 | 100.0 | |

Deferred vested members are assumed to retire at age first eligibility for unreduced benefits.

C. Other Assumptions

1. Percent married: 80% of employees are assumed to be married.
2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
3. Cost of living adjustment: None.
4. Optional forms: Members are assumed to elect the normal form of benefit.
5. Current and future deferred vested participants are assumed to retire at the earlier of age 62 and eligibility for rule of 80 for Tier 1 and the earlier of age 65 and eligibility for the rules of 85 (but at least 60) for Tier 2.
6. Administrative expenses: Administrative expenses are added to the employer normal cost, before application of the round up policy.
7. Pay increase timing: End of year.
8. Decrement timing: Decrements of all types are assumed to occur mid-year.

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

10. Decrement relativity: Decrement rates are used directly, without adjustment for multiple decrement table effects.

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

12. Benefit and Eligibility Service due to Accrued Sick and Vacation Leave at Retirement and Termination: Tier 1 Members are assumed to have an additional 0.019 years per year of benefit and eligibility service at early or normal retirement and termination due to accrued sick and vacation leave. This assumption was developed using sick and vacation leave and service amounts for active members included in the actuarial valuation as of June 30, 2013.

## Active Member Counts by Age and Service as of July 1, 2016

| Age | Service | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | Over 30 | Total |
| Under 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 20-24 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 25-29 | 126 | 5 | 1 | 0 | 0 | 0 | 0 | 132 |
| 30-34 | 149 | 38 | 20 | 2 | 0 | 0 | 0 | 209 |
| 35-39 | 120 | 43 | 49 | 30 | 0 | 0 | 0 | 242 |
| 40-44 | 102 | 56 | 85 | 66 | 21 | 0 | 0 | 330 |
| 45-49 | 89 | 47 | 87 | 98 | 60 | 11 | 1 | 393 |
| 50-54 | 78 | 52 | 83 | 89 | 99 | 26 | 14 | 441 |
| 55-59 | 73 | 45 | 83 | 117 | 56 | 35 | 25 | 434 |
| 60-64 | 50 | 25 | 40 | 46 | 24 | 23 | 16 | 224 |
| 65-69 | 5 | 3 | 12 | 9 | 6 | 5 | 12 | 52 |
| Over 70 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 10 |
| **Total** | 821 | 315 | 462 | 459 | 268 | 101 | 69 | 2,495 |

**Tucson Supplemental Retirement System**
**Schedule of Funding Progress**
**$ in thousands**

| Actuarial Valuation Date | Actuarial Value of Assets | Actuarial Accrued Liability (AAL) | Unfunded AAL (UAAL) | Funded Ratio | Covered Payroll | UAAL as a Percentage of Covered Payroll |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4)=(3)-(2) | (5)=(2)/(3) | (6) | (7)=(4)/(6) |
| 6/30/1991 | $ 164,268 | $ 175,537 | $ 11,269 | 93.6% | $86,830 | 13.0% |
| 6/30/1992 | 179,570 | 187,812 | 8,242 | 95.6% | 86,205 | 9.6% |
| 6/30/1993 | 197,282 | 208,024 | 10,742 | 94.8% | 92,867 | 11.6% |
| 6/30/1994 | 213,541 | 230,026 | 16,485 | 92.8% | 94,180 | 17.5% |
| 6/30/1995 | 237,713 | 249,049 | 11,336 | 95.4% | 99,847 | 11.4% |
| 6/30/1996 | 266,740 | 269,186 | 2,446 | 99.1% | 105,230 | 2.3% |
| 6/30/1997 | 304,684 | 297,490 | (7,194) | 102.4% | 110,189 | -6.5% |
| 6/30/1998 | 353,057 | 348,966 | (4,090) | 101.2% | 113,729 | -3.6% |
| 6/30/1999 | 402,875 | 400,224 | (2,651) | 100.7% | 126,817 | -2.1% |
| 6/30/2000 | 453,954 | 437,750 | (16,204) | 103.7% | 134,088 | -12.1% |
| 6/30/2001[1] | 470,672 | 486,702 | 16,030 | 96.7% | 145,059 | 11.1% |
| 6/30/2001[2] | 470,672 | 495,359 | 24,687 | 95.0% | 145,059 | 17.0% |
| 6/30/2002 | 463,102 | 553,947 | 90,845 | 83.6% | 153,580 | 59.2% |
| 6/30/2003 | 458,857 | 601,173 | 142,316 | 76.3% | 143,164 | 99.4% |
| 6/30/2004 | 494,987 | 645,351 | 150,364 | 76.7% | 149,782 | 100.4% |
| 6/30/2005 | 538,789 | 693,871 | 155,082 | 77.6% | 162,149 | 95.6% |
| 6/30/2006[1] | 588,228 | 734,377 | 146,149 | 80.1% | 155,855 | 93.8% |
| 6/30/2006[2] | 588,228 | 735,793 | 147,565 | 79.9% | 155,855 | 94.7% |
| 6/30/2007[1] | 634,763 | 758,427 | 123,663 | 83.7% | 159,250 | 77.7% |
| 6/30/2007[2,3] | 634,763 | 763,539 | 128,776 | 83.1% | 159,250 | 80.9% |
| 6/30/2008 | 650,227 | 822,205 | 171,978 | 79.1% | 153,982 | 111.7% |
| 6/30/2009 | 665,298 | 859,485 | 194,187 | 77.4% | 149,925 | 129.5% |
| 6/30/2010 | 641,819 | 904,480 | 262,662 | 71.0% | 141,459 | 185.7% |
| 6/30/2011 | 624,665 | 928,609 | 303,944 | 67.3% | 121,631 | 249.9% |
| 6/30/2012 | 597,107 | 940,939 | 343,832 | 63.5% | 125,003 | 275.1% |
| 6/30/2013 | 600,330 | 948,562 | 348,232 | 63.3% | 125,858 | 276.7% |
| 6/30/2014 | 655,998 | 1,012,393 | 356,396 | 64.8% | 126,639 | 281.4% |
| 6/30/2015 | 706,774 | 1,021,378 | 314,604 | 69.2% | 123,415 | 254.9% |
| 6/30/2016 | 732,927 | 1,030,695 | 297,768 | 71.1% | 115,183 | 258.5% |

[1] *Before benefit changes*
[2] *After benefit changes*
[3] *Reflects an ad-hoc pension increase*

**Tucson Supplemental Retirement System**
**Schedule of Employer Contributions**

| Fiscal Year Ended June 30, | Annual Required Contribution | Actual City Contribution | Percentage Contributed |
|---|---|---|---|
| 1996 | 8.55 % | 8.18 % | 95.67 % |
| 1997 | 8.05 | 8.38 | 104.10 |
| 1998 | 8.05 | 8.38 | 104.10 |
| 1999 | 7.41 | 7.91 | 106.75 |
| 2000 | 6.07 | 7.35 | 121.09 |
| 2001 | 6.77 | 7.35 | 108.57 |
| 2002 | 6.30 | 7.35 | 116.67 |
| 2003 | 8.41 | 8.41 | 100.00 |
| 2004 | 11.17 | 11.17 | 100.00 |
| 2005 | 14.06 | 14.06 | 100.00 |
| 2006 | 14.83 | 14.83 | 100.00 |
| 2007 | 15.04 | 15.04 | 100.00 |
| 2008 | 15.21 | 15.21 | 100.00 |
| 2009 | 14.37 | 14.37 | 100.00 |
| 2010 | 16.84 | 16.84 | 100.00 |
| 2011 | 18.02 | 18.02 | 100.00 |
| 2012 | 23.38 | 23.38 | 100.00 |
| 2013 | 28.77 | 28.77 | 100.00 |
| 2014 | 27.09 | 27.09 | 100.00 |
| 2015 | 26.95 | 27.50 | 102.04 |
| 2016 | 27.03 | 27.50 | 101.74 |
| 2017 | 25.52 | N/A | N/A |
| 2018 | 25.78 | N/A | N/A |

## Tucson Supplemental Retirement System
## Solvency Test

| Valuation Date | Aggregate Accrued Liabilities For: (1) Active Member Contributions | (2) Retirants and Beneficiaries | (3) Active Member (Employer Financed Portion) | Valuation Assets | Portion of Accrued Liabilities Covered by Reported Assets: (1) | (2) | (3) |
|---|---|---|---|---|---|---|---|
| 6/30/1991 | $ 44,496,039 | $ 72,419,436 | $ 86,372,322 | $164,268,134 | 100.0 % | 100.0 % | 54.8 % |
| 6/30/1992 | 49,238,019 | 80,342,604 | 86,902,648 | 179,569,858 | 100.0 | 100.0 | 57.5 |
| 6/30/1993 | 55,146,786 | 85,832,484 | 98,492,344 | 197,281,861 | 100.0 | 100.0 | 57.2 |
| 6/30/1994 | 60,424,161 | 95,449,308 | 105,838,311 | 213,540,661 | 100.0 | 100.0 | 54.5 |
| 6/30/1995 | 66,316,408 | 102,511,728 | 113,211,848 | 237,712,863 | 100.0 | 100.0 | 60.8 |
| 6/30/1996 | 72,294,235 | 109,572,672 | 118,739,900 | 266,740,007 | 100.0 | 100.0 | 71.5 |
| 6/30/1997 | 78,991,358 | 119,508,312 | 128,878,531 | 304,684,444 | 100.0 | 100.0 | 82.4 |
| 6/30/1998 | 85,106,175 | 129,345,816 | 134,514,294 | 353,056,577 | 100.0 | 100.0 | 103.0 |
| 6/30/1999 | 92,367,491 | 139,805,832 | 168,050,794 | 402,875,158 | 100.0 | 100.0 | 101.6 |
| 6/30/2000 | 100,413,022 | 150,527,136 | 186,809,583 | 453,953,722 | 100.0 | 100.0 | 108.7 |
| 6/30/2001 | 108,696,394 | 161,740,968 | 224,921,223 | 470,671,667 | 100.0 | 100.0 | 89.0 |
| 6/30/2002 | 118,913,979 | 187,508,568 | 247,524,186 | 463,101,526 | 100.0 | 100.0 | 63.3 |
| 6/30/2003 | 110,195,709 | 275,193,384 | 215,784,329 | 458,856,831 | 100.0 | 100.0 | 34.0 |
| 6/30/2004 | 123,643,527 | 286,698,084 | 235,009,321 | 494,986,798 | 100.0 | 100.0 | 36.0 |
| 6/30/2005 | 135,346,297 | 298,395,396 | 260,129,138 | 538,788,828 | 100.0 | 100.0 | 40.4 |
| 6/30/2006 | 140,387,532 | 326,828,088 | 268,577,863 | 588,227,845 | 100.0 | 100.0 | 45.1 |
| 6/30/2007 | 136,028,896 | 371,497,680 | 256,012,354 | 634,763,193 | 100.0 | 100.0 | 49.7 |
| 6/30/2008 | 125,331,432 | 473,240,976 | 223,632,380 | 650,227,215 | 100.0 | 100.0 | 23.1 |
| 6/30/2009 | 133,633,947 | 494,923,021 | 230,928,190 | 665,298,494 | 100.0 | 100.0 | 15.9 |
| 6/30/2010 | 140,224,998 | 525,200,232 | 239,055,106 | 641,818,551 | 100.0 | 95.5 | 0.0 |
| 6/30/2011 | 119,049,097 | 614,497,202 | 195,062,492 | 624,664,880 | 100.0 | 82.3 | 0.0 |
| 6/30/2012 | 122,240,396 | 607,450,331 | 211,247,995 | 597,106,511 | 100.0 | 78.2 | 0.0 |
| 6/30/2013 | 138,342,388 | 609,558,963 | 200,661,102 | 600,330,066 | 100.0 | 75.8 | 0.0 |
| 6/30/2014 | 142,418,791 | 647,811,688 | 222,162,858 | 655,997,802 | 100.0 | 79.3 | 0.0 |
| 6/30/2015 | 143,648,835 | 661,292,061 | 216,436,668 | 706,773,630 | 100.0 | 85.2 | 0.0 |
| 6/30/2016 | 133,200,540 | 699,577,704 | 197,916,702 | 732,926,710 | 100.0 | 85.7 | 0.0 |

## Tucson Supplemental Retirement System
## Comparative Schedule of Annual Pension Benefits Paid

| Year Ending June 30 | Retired Members | Annual Pensions | % Increase | No. of Active Per Retired | Pensions as % of Active Payroll | Average Pensions | Actuarial Present Value of Pensions | Expected Removals No. | Expected Removals Pensions |
|---|---|---|---|---|---|---|---|---|---|
| 1989 [1] | 780 | $ 5,344,719 | 17.6 % | 4.2 [2] | 6.6 % | $ 6,852 | $ 46,556,352 | 26.6 | $ 133,860 |
| 1990 | 832 | 6,488,714 | 21.4 | 3.9 | 7.5 | 7,799 | 57,430,128 | 28.5 | 150,864 |
| 1991 [1] | 918 | 8,111,103 | 25.0 | 3.5 | 9.3 | 8,836 | 72,419,436 | 29.8 | 172,608 |
| 1992 | 965 | 9,010,345 | 11.1 | 3.3 | 10.5 | 9,337 | 80,342,604 | 32.3 | 208,068 |
| 1993 [1] | 989 | 9,704,929 | 7.7 | 3.3 | 10.5 | 9,813 | 85,832,484 | 34.3 | 235,068 |
| 1994 | 1,035 | 10,612,612 | 9.4 | 3.2 | 11.3 | 10,254 | 95,449,308 | 35.8 | 263,340 |
| 1995 [1] | 1,065 | 11,429,402 | 7.7 | 3.1 | 11.4 | 10,732 | 102,511,728 | 35.8 | 270,600 |
| 1996 | 1,105 | 12,236,298 | 7.1 | 3.1 | 11.6 | 11,074 | 109,572,672 | 37.7 | 302,952 |
| 1997 [1] | 1,156 | 13,391,185 | 9.4 | 3.0 | 12.2 | 11,594 | 119,508,312 | 39.4 | 325,440 |
| 1998 | 1,208 | 14,479,476 | 8.1 | 2.9 | 12.7 | 11,986 | 129,345,816 | 42.4 | 370,344 |
| 1999 [1] | 1,260 | 15,721,865 | 8.6 | 2.8 | 12.4 | 12,478 | 139,805,832 | 44.2 | 402,504 |
| 2000 [1] | 1,301 | 16,966,042 | 7.9 | 2.8 | 12.7 | 13,041 | 150,527,136 | 46.2 | 445,464 |
| 2001 [1] | 1,355 | 18,505,247 | 9.1 | 2.7 | 12.8 | 13,657 | 161,740,968 | 47.1 | 484,776 |
| 2002 [1] | 1,442 | 21,273,162 | 15.0 | 2.5 | 13.9 | 14,753 | 187,508,568 | 53.3 | 622,236 |
| 2003 [1] | 1,742 | 29,767,500 | 39.9 | 1.9 | 20.8 | 17,088 | 275,193,384 | 58.2 | 742,908 |
| 2004 [1] | 1,753 | 30,491,864 | 2.4 | 2.0 | 20.4 | 17,394 | 286,698,084 | 55.7 | 717,888 |
| 2005 [1] | 1,793 | 32,027,305 | 5.0 | 2.0 | 19.8 | 17,862 | 298,395,396 | 58.3 | 781,152 |
| 2006 [1] | 1,878 | 35,091,468 | 9.6 | 1.7 | 22.5 | 18,686 | 326,828,088 | 61.1 | 857,760 |
| 2007 [1] | 2,018 | 39,883,032 | 13.7 | 1.6 | 25.0 | 19,764 | 371,497,680 | 66.3 | 977,328 |
| 2008 | 2,307 | 49,489,643 | 24.1 | 1.4 | 32.1 | 21,452 | 473,240,976 | 74.4 | 1,134,019 |
| 2009 | 2,365 | 50,810,927 | 2.7 | 1.3 | 33.9 | 21,485 | 494,923,021 | 63.8 | 994,553 |
| 2010 | 2,450 | 53,115,267 | 4.5 | 1.2 | 37.5 | 21,680 | 525,200,232 | 58.9 | 948,815 |
| 2011 | 2,709 | 61,710,576 | 16.2 | 1.0 | 50.7 | 22,780 | 614,497,202 | 63.5 | 1,059,171 |
| 2012 | 2,704 | 61,737,864 | 0.0 | 1.0 | 49.4 | 22,832 | 607,450,331 | 66.1 | 1,125,302 |
| 2013 | 2,719 | 62,548,233 | 1.3 | 1.0 | 49.7 | 23,004 | 609,558,963 | 69.0 | 1,200,744 |
| 2014 | 2,764 | 64,275,837 | 2.8 | 1.0 | 50.8 | 23,255 | 647,811,688 | 70.4 | 1,219,112 |
| 2015 | 2,809 | 66,133,217 | 2.9 | 0.9 | 53.6 | 23,543 | 661,292,061 | 73.7 | 1,301,409 |
| 2016 | 2,945 | 70,256,788 | 6.2 | 0.8 | 61.0 | 23,856 | 699,577,704 | 75.9 | 1,392,573 |

## Tucson Supplemental Retirement System
### Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

| Fiscal Year | Added to Rolls | | Removed from Rolls | | Rolls End of Year | | | Average Annual Allowance | Percentage Increase in Allowance |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Annual Allowances | Number | Annual Allowances | Number | Annual Allowance | | | |
| 6/30/2005 | 68 | $3,498,948 | 42 | $485,633 | 1,791 | $ | 31,990,842 | 17,796 | |
| 6/30/2006 | 101 | $2,335,032 | 53 | $656,383 | 1,878 | $ | 35,092,308 | 18,686 | 4.61% |
| 6/30/2007 | 213 | $6,055,096 | 36 | $403,347 | 2,018 | $ | 39,883,032 | 19,764 | 5.77% |
| 6/30/2008 | 313 | $10,001,857 | 24 | $395,246 | 2,307 | $ | 49,489,643 | 21,452 | 8.54% |
| 6/30/2009 | 112 | $2,005,399 | 54 | $684,115 | 2,365 | $ | 50,810,927 | 21,485 | 0.15% |
| 6/30/2010 | 141 | $3,089,275 | 56 | $784,935 | 2,450 | $ | 53,115,267 | 21,680 | 0.91% |
| 6/30/2011 | 332 | $9,880,306 | 73 | $1,284,997 | 2,709 | $ | 61,710,576 | 22,780 | 5.07% |
| 6/30/2012 | 64 | $1,084,848 | 69 | $1,057,560 | 2,704 | $ | 61,737,864 | 22,832 | 0.23% |
| 6/30/2013 | 96 | $2,027,292 | 81 | $1,216,923 | 2,719 | $ | 62,548,233 | 23,004 | 0.75% |
| 6/30/2014 | 114 | $2,635,101 | 69 | $907,497 | 2,764 | $ | 64,275,837 | 23,255 | 1.09% |
| 6/30/2015 | 127 | $3,157,078 | 82 | $1,299,698 | 2,809 | $ | 66,133,217 | 23,543 | 1.24% |
| 6/30/2016 | 214 | $5,463,524 | 78 | $1,339,953 | 2,945 | $ | 70,256,788 | 23,856 | 1.33% |

# SUMMARY OF BENEFIT PROVISONS

## JUNE 30, 2016

### NORMAL RETIREMENT (NO REDUCTION FACTOR)

**Eligibility**:

***Tier 1*** – Members hired before July 1, 2011. Age 62, or a combination of age and creditable service equal to 80 (for those hired on or after July 1, 2009, eligibility at age 62 requires a minimum of 5 years of accrued service).

***Tier 2*** – Members hired on or after July 1, 2011. Age 65 with 5 years of service or a combination of age and creditable service equal to 85 and the attainment of age 60.

***Amount*** - Creditable service times 2.25% of average final compensation for Tier 1 and 2.00% of average final compensation for Tier 2.

***Average Final Compensation*** - The average monthly creditable compensation for the period of 36 consecutive months during which the member's creditable compensation was the highest during the 120 months immediately preceding the date of retirement for Tier 1 and 60 consecutive months during which the member's creditable compensation was the highest during the 120 months immediately preceding the date of retirement for Tier 2. Effective July 1, 2000, accrued unused sick leave at the final salary may be substituted for an equal number of hours at the beginning of the 36 month period for Tier 1.

### EARLY RETIREMENT (REDUCTION FACTOR)

***Eligibility*** - Age 55 with 20 or more years of creditable service for Tier 1 and age 60 with 20 or more years of creditable service tor Tier 2.

***Amount*** - An amount computed as for normal retirement but reduced by 1/2 of 1% per month for each month (6% per year) retirement precedes normal retirement.

### DEFERRED RETIREMENT (VESTED TERMINATION)

***Eligibility*** - 5 or more years of accrued service. Deferred retirement benefits for terminated vested employee becomes automatic at age 62 (age 65 for Tier 2) or when a combination of age and creditable service equals 80 (85 with the attainment of age 60 for Tier 2), unless the member elects to withdraw the employee contribution account in lieu of a deferred retirement benefit. In addition to the eligibility listed above, the term-vested member may chose an Early Retirement (minimum age of 55 for Tier 1 and 60 for Tier 2 and minimum service of 20 yrs) subject to the same reduction – reduced by ½ of 1% per month for each month (6% per year) retirement precedes normal retirement eligibility.

***Amount*** - An amount computed as for normal retirement.

## DISABILITY RETIREMENT

***Eligibility*** - Eligibility requires 10 or more years of credited service and a disability that is total and permanent.

***Amount*** - An amount computed as for normal retirement. Disability Retirement Benefits are offset, if the combination of all employer-provided benefits exceeds 100% of the members adjusted income base, then members pension benefit from TSRS is reduced so income does not exceed the 100% maximum allowed.

## PRE-RETIREMENT SURVIVOR BENEFITS

***Eligibility*** - 5 or more years of accrued service and not eligible to retire.

***Amount*** - Lump sum payment equal to twice the member's contributions, with interest.

***Eligibility*** - After attaining eligibility for retirement, in the event the member dies prior to submitting an application for retirement benefits:

***Amount*** - If the member is married, a default provision allows the member's spouse to elect to receive either a lump sum payment of twice the member's contributions account, or receive a lifetime annuity benefit determined as if the member had elected a joint & last survivor benefit of 100% survivor annuity prior to death. If the member is not married and has named a single non-spousal beneficiary, the beneficiary may elect to receive either a lump sum payment of twice the member's contributions account, or receive a 15 year annuity benefit determined as if the member elected payment of a 15 year term certain annuity. If the member has named multiple designated beneficiaries, a lump sum refund of the member's account balance will be paid to the named beneficiaries.

## OTHER TERMINATION BENEFITS

***Eligibility*** - Termination of employment without eligibility for any other benefit.

***Amount*** - Accumulated contributions and interest in members account at time of termination.

## EMPLOYEE CONTRIBUTIONS

Interest is credited to member accumulated contributions accounts as simple interest two times per year at an annual interest rate of 6%. For those hired prior to July 1, 2006, employee contributions are 5.00% of salary. For those hired between July 1, 2006 and June 30, 2011 (Tier I variable class) and for those hired after July 1, 2011 (Tier II variable class), employee contributions are 50% of the respective Normal Cost for each class, with a floor of 5.0%. The employee contributions for the Tier I and Tier II variable classes for FY 17/18 are 6.55% and 4.89%, respectively, before application of the floor or roundup policy.

**CITY CONTRIBUTIONS**

City Contributions are actuarially determined; which together with employee contributions and investment earnings will fund the obligations of the System in accordance with generally accepted actuarial principles. (Please refer to the Funding Policy in Section I of this report).

**POST-RETIREMENT ADJUSTMENTS**

The TSRS Board has established formal policies to determine whether the system shall fund an annual supplemental post-retirement benefit payment to retired members and beneficiaries.

CITY OF

FOUNDED 1775

TUCSON

# STATISTICAL SECTION

## Discussion of Statistical Section

This section of the Tucson Supplemental Retirement System's comprehensive annual financial report (CAFR) provides detailed financial and non-financial information, often considered relevant to users. The statistical section presents certain information on a trend basis; that is, a summary of information that is provided for each year in a ten-year period. Other non-trend schedules present demographic and participation information for our active and retired membership. Each schedule is defined below with an explanation and an identification of the source of the data.

**Statement of Changes in Plan Net Position**
This schedule provides the additions and deductions to the plan for the past ten years. The change in net position is provided to illustrate whether or not sufficient resources are available in the current fiscal year to cover plan benefits. This schedule is developed using the Statements of Changes in Plan Net Position for the past ten years.

**Retired Members by Type of Benefit**
This schedule provides the number of retired members by type of benefit. The TSRS plan benefits include payments for normal retirement benefits, disability benefits, survivor benefits, and term certain benefits paid to members, beneficiaries and alternate payees. The schedule is developed using TSRS' database.

**Average Monthly Benefit Payments to New Retirees**
This schedule provides the average monthly benefit payments made to new retirees, using six ranges of years of credited service by year. This information is provided to illustrate changes in benefit payments as the amount of service earned increases and indicates the number of employees retired during each of the last 10 years. This schedule is developed using TSRS' database.

**Demographics of Retired and Active Members**
This schedule provides the age demographics of all retirees, survivors and beneficiaries of retired members for this year only. Similarly, age demographics for the systems active membership are indicated as well as the relative composition of membership categorized by Tier. This schedule is developed using TSRS' membership database.

**Employee and Employer Contribution Rates**
This schedule provides the contribution rates paid by the Plan sponsor and by City employees during the past 10 years. This schedule is a historical summary of the actual rates paid.

**Benefit and Refund Deductions from Net Position by Type**
This schedule provides the benefits paid to all service and disability retirees during each of the last 10 years. In addition, the lump sum payments to members elected to participate in the End of Service program since 2007 and refunds associated with member deaths, separation from service and transfers to other retirement systems are summarized. This schedule is developed using the Statements of Changes in Plan Net Position for the past ten years.

**Retiree Benefit and Service Summary**
This schedule indicates average retiree benefits paid to retirees, based on the number of years retired, indicating eight age categories and the years of credited service served. This schedule is developed using TSRS' membership database.

**Tucson Supplemental Retirement System**
**Statement of Changes in Plan Net Position - Last Ten Fiscal Years**

**For the Fiscal Years Ending June 30,**

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|---|---|---|---|---|---|
| **Additions** | | | | | |
| City Contributions | $ 33,175,307 | $ 33,985,523 | $ 34,189,288 | $ 34,523,315 | $ 27,429,666 |
| Employee Contributions | 6,300,714 | 6,512,180 | 6,636,833 | 9,200,262 | 7,685,264 |
| Purchase of Service | 755,299 | 1,019,665 | 701,711 | 1,014,301 | 1,280,263 |
| Contributions from Other Sources | - | - | - | - | 50,000 |
| Transfers from Other Systems | 27,372 | - | - | - | 204,404 |
| Total Contributions | $ 40,258,692 | $ 41,517,368 | $ 41,527,832 | $ 44,737,878 | $ 36,649,597 |
| **Investment Income** | | | | | |
| Net Gain (Loss) in Fair Value of Investments | $ 8,758,641 | $ 22,467,139 | $ 111,063,362 | $ 73,705,613 | $ 566,661 |
| Interest | 6,649,353 | 6,393,666 | 5,901,539 | 4,174,559 | 6,319,874 |
| Dividends | 6,408,886 | 5,915,832 | 6,786,728 | 7,158,084 | 4,981,339 |
| Securities Lending Income | 148,059 | 163,140 | 134,036 | 184,733 | 157,562 |
| Miscellaneous Income | 105,713 | 20,783 | 91,630 | 98,400 | 16,833 |
| Net Income from Investment Activity | $ 22,070,652 | $ 34,960,560 | $ 123,977,295 | $ 85,321,389 | $ 12,042,269 |
| **Less Investment Expenses:** | | | | | |
| Securities Lending Fees | $ 59,201 | $ 65,676 | $ 54,589 | $ 78,604 | $ 68,370 |
| Investment Services | 3,937,354 | 4,092,449 | 4,022,476 | 3,805,861 | 3,460,730 |
| Total Investment Expense | $ 3,996,555 | $ 4,158,125 | $ 4,077,065 | $ 3,884,465 | $ 3,529,100 |
| Net Investment Gain | $ 18,074,097 | $ 30,802,435 | $ 119,900,230 | $ 81,436,924 | $ 8,513,169 |
| **Total Additions** | $ 58,332,789 | $ 72,319,803 | $ 161,428,062 | $ 126,174,802 | $ 45,162,766 |
| **Deductions** | | | | | |
| Benefits | $ 67,910,496 | $ 65,216,458 | $ 63,477,074 | $ 62,191,480 | $ 61,693,408 |
| Refunds | 2,499,342 | 2,395,893 | 2,524,939 | 2,631,221 | 2,247,225 |
| Transfers to Other Systems | 35,912 | - | - | - | - |
| Administrative Expenses | 786,028 | 650,405 | 735,739 | 689,252 | 550,604 |
| Miscellaneous Deductions | 111,679 | - | - | - | - |
| **Total Deductions** | $ 71,343,457 | $ 68,262,756 | $ 66,737,752 | $ 65,511,953 | $ 64,491,237 |
| **Net Change in Plan Net Position** | **$ (13,010,668)** | **$ 4,057,047** | **$ 94,690,310** | **$ 60,662,849** | **$ (19,328,471)** |

**Tucson Supplemental Retirement System**
**Statement of Changes in Plan Net Position - Last Ten Fiscal Years**

**For the Fiscal Years Ending June 30,**

| | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|
| **Additions** | | | | | |
| City Contributions | $ 23,432,916 | $ 23,260,609 | $ 21,279,535 | $ 23,902,286 | $ 22,670,418 |
| Employee Contributions | 7,562,294 | 8,041,748 | 8,156,115 | 8,591,124 | 8,120,057 |
| Purchase of Service | 3,772,923 | 1,556,832 | 1,565,164 | 5,186,289 | 1,008,980 |
| Contributions from Other Sources | 50,000 | 50,000 | 140,512 | 130,784 | 41,595 |
| Transfers from Other Systems | 700,009 | 1,652,656 | 1,589,190 | 2,012,917 | 3,794,093 |
| Total Contributions | $ 35,518,142 | $ 34,561,845 | $ 32,730,516 | $ 39,823,400 | $ 35,635,143 |
| **Investment Income** | | | | | |
| Net Gain (Loss) in Fair Value of Investments | $ 106,114,437 | $ 40,143,355 | $ (155,121,980) | $ (50,256,771) | $ 85,493,111 |
| Interest | 6,361,246 | 7,441,435 | 11,087,144 | 10,815,803 | 7,649,621 |
| Dividends | 5,589,052 | 6,743,309 | 7,219,584 | 10,009,694 | 9,537,064 |
| Securities Lending Income | 124,158 | 91,625 | 359,394 | 1,881,706 | 2,594,083 |
| Miscellaneous Income | 45,681 | 3,640 | 120,820 | 152,848 | 6,038 |
| Net Income from Investment Activity | $ 118,234,574 | $ 54,423,364 | $ (136,335,038) | $ (27,396,720) | $ 105,279,917 |
| **Less Investment Expenses:** | | | | | |
| Securities Lending Fees | $ 35,027 | $ 25,401 | $ 197,429 | $ 1,708,227 | $ 2,517,081 |
| Investment Services | 3,871,641 | 4,096,007 | 4,580,028 | 4,129,652 | 3,433,243 |
| Total Investment Expense | $ 3,906,668 | $ 4,121,408 | $ 4,777,457 | $ 5,837,879 | $ 5,950,324 |
| Net Investment Gain | $ 114,327,906 | $ 50,301,956 | $ (141,112,495) | $ (33,234,599) | $ 99,329,593 |
| **Total Additions** | $ 149,846,048 | $ 84,863,801 | $ (108,381,979) | $ 6,588,801 | $ 134,964,736 |
| **Deductions** | | | | | |
| Benefits | $ 58,247,882 | $ 51,700,541 | $ 51,996,508 | $ 46,211,560 | $ 40,419,922 |
| Refunds | 2,350,626 | 2,110,360 | 1,689,956 | 1,265,235 | 1,573,276 |
| Transfers to Other Systems | 2,928,607 | 898,085 | 2,655,061 | 4,340,520 | 11,886,941 |
| Administrative Expenses | 728,642 | 672,622 | 864,382 | 519,346 | 485,469 |
| **Total Deductions** | $ 64,255,757 | $ 55,381,608 | $ 57,205,907 | $ 52,336,661 | $ 54,365,608 |
| **Net Change in Plan Net Position** | **$ 85,590,291** | **$ 29,482,193** | **$ (165,587,886)** | **$ (45,747,860)** | **$ 80,599,128** |

## Tucson Supplemental Retirement System
## Retired Members by Type of Benefit
## As of June 30, 2016

| Amount of Monthly Benefit | Number of Retirees | Type of Retirement[a] 1 | 2 | 3 | 4 | Option Selected[b] 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $ 1 - $ 250 | 41 | 24 | 13 | 1 | 3 | 28 | | | 1 | 6 | 2 | 4 |
| $ 251 - $ 500 | 172 | 97 | 55 | 12 | 8 | 110 | 1 | 2 | 5 | 19 | 9 | 26 |
| $ 501 - $ 750 | 238 | 131 | 70 | 32 | 5 | 133 | 1 | 2 | 2 | 47 | 17 | 36 |
| $ 751 - $ 1,000 | 233 | 141 | 54 | 32 | 6 | 126 | | 2 | | 48 | 15 | 42 |
| $ 1,001 - $ 1,250 | 272 | 190 | 45 | 28 | 9 | 133 | | | | 36 | 37 | 66 |
| $ 1,251 - $ 1,500 | 241 | 190 | 33 | 15 | 3 | 104 | 1 | 1 | 1 | 46 | 34 | 54 |
| $ 1,501 - $ 1,750 | 263 | 235 | 13 | 13 | 2 | 118 | 1 | | 2 | 51 | 36 | 55 |
| $ 1,751 - $ 2,000 | 276 | 255 | 10 | 10 | 1 | 123 | | 3 | 2 | 55 | 41 | 52 |
| $ 2,001 - $ 2,250 | 219 | 204 | 8 | 6 | 1 | 100 | 1 | 5 | 1 | 52 | 22 | 38 |
| $ 2,251 - $ 2,500 | 207 | 197 | 4 | 4 | 2 | 92 | | | 1 | 55 | 17 | 42 |
| $ 2,501 - $ 2,750 | 170 | 164 | 5 | 1 | | 92 | | 2 | 1 | 27 | 15 | 33 |
| $ 2,751 - $ 3,000 | 114 | 113 | | 1 | | 69 | | | | 13 | 15 | 17 |
| $ 3,001 - $ 3,250 | 91 | 90 | 1 | | | 45 | | | 2 | 14 | 6 | 24 |
| $ 3,251 - $ 3,500 | 62 | 61 | 1 | | | 30 | | 1 | | 12 | 9 | 10 |
| $ 3,501 - $ 3,750 | 60 | 60 | | | | 33 | | | | 7 | 6 | 14 |
| $ 3,751 - $ 4,000 | 51 | 50 | 1 | | | 31 | | | 1 | 3 | 3 | 13 |
| $ 4,001 - $ 4,250 | 41 | 40 | 1 | | | 20 | | | 1 | 6 | 3 | 11 |
| $ 4,251 - $ 4,500 | 33 | 33 | | | | 20 | | | | 5 | 6 | 2 |
| $ 4,501 - and over | 161 | 160 | 1 | | | 83 | | 1 | 3 | 25 | 22 | 27 |
| | 2,945 | 2,435 | 315 | 155 | 40 | 1,490 | 5 | 19 | 23 | 527 | 315 | 566 |

Notes:

[a]Type of retirement
1 - Normal retirement for age and service
2 - Beneficiary payment, normal retirement
3 - Disabiltiy retirement
4 - Beneficiary payment, disability retirement

[b]Option selected:
1 - Single life; beneficiary receives lump sum of member's unused contributions
2 - Beneficiary receives remainder of 5 yr term, if applicable
3 - Beneficiary receives remainder of 10 yr term, if applicable
4 - Beneficiary receives remainder of 15 yr term, if applicable
5 - Beneficary receives 75% of member's reduced benefit
6 - Beneficary receives 50% of member's reduced benefit
7 - Beneficary receives 100% of member's reduced benefit

This schedule indicates the retirement benefit option types selected and paid to members, showing the level of income and the number of retirees in each category.

## Tucson Supplemental Retirement System
## Average Monthly Payments to New Retirees
## June 30, 2016

| Retirement Effective Dates | Years of Credited Service | | | | | | |
|---|---|---|---|---|---|---|---|
| **For Fiscal Years Ending June 30** | **<5** | **5-9** | **10-14** | **15-19** | **20-24** | **25-29** | **> 30** |
| 2016 | | | | | | | |
| Avg Monthly Benefit | n/a | $ 677 | $ 1,001 | $ 1,439 | $ 2,155 | $ 2,868 | $ 3,854 |
| Avg Monthly Final Avg Comp. | n/a | $ 3,829 | $ 4,076 | $ 3,883 | $ 4,465 | $ 4,977 | $ 5,660 |
| Number of Active/EOSP retirees | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 2015 | | | | | | | |
| Avg Monthly Benefit | n/a | $ 803 | $ 1,077 | $ 1,670 | $ 2,202 | $ 2,968 | $ 3,864 |
| Avg Monthly Final Avg Comp. | n/a | $ 5,267 | $ 3,679 | $ 4,698 | $ 4,645 | $ 5,118 | $ 5,506 |
| Number of Active/EOSP retirees | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 2014 | | | | | | | |
| Avg Monthly Benefit | n/a | $ 635 | $ 1,024 | $ 1,665 | $ 2,364 | $ 2,693 | $ 4,188 |
| Avg Monthly Final Avg Comp. | n/a | $ 4,040 | $ 4,005 | $ 4,255 | $ 4,870 | $ 4,617 | $ 6,061 |
| Number of Active/EOSP retirees | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 2013 | | | | | | | |
| Avg Monthly Benefit | $ 507 | $ 578 | $ 1,275 | $ 1,669 | $ 2,060 | $ 2,956 | $ 3,876 |
| Avg Monthly Final Avg Comp. | $ 5,609 | $ 3,077 | $ 4,497 | $ 4,121 | $ 4,041 | $ 4,680 | $ 5,124 |
| Number of Active/EOSP retirees | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 2012* | | | | | | | |
| Avg Monthly Benefit | $ 237 | $ 563 | $ 923 | $ 1,829 | $ 1,428 | $ 2,401 | $ 2,745 |
| Avg Monthly Final Avg Comp. | $ 2,728 | $ 3,355 | $ 3,240 | $ 4,787 | $ 2,767 | $ 3,869 | $ 3,745 |
| Number of Active/EOSP retirees | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 2011* | | | | | | | |
| Avg Monthly Benefit | $ 519 | $ 560 | $ 964 | $ 1,913 | $ 2,303 | $ 2,998 | $ 3,780 |
| Avg Monthly Final Avg Comp. | $ 2,865 | $ 3,350 | $ 3,352 | $ 4,774 | $ 4,509 | $ 4,899 | $ 5,044 |
| Number of Active/EOSP retirees | 5 | 12 | 18 | 24 | 83 | 107 | 58 |
| 2010* | | | | | | | |
| | | 1-9 | 10-14 | 15-19 | 20-24 | 25-29 | >30 |
| Avg Monthly Benefit | | $ 481 | $ 931 | $ 1,466 | $ 2,374 | $ 2,386 | $ 3,376 |
| Avg Monthly Final Avg Comp. | | $ 3,229 | $ 2,976 | $ 3,841 | $ 5,148 | $ 4,251 | $ 4,871 |
| Number of Active/EOSP retirees | | 23 | 16 | 13 | 35 | 23 | 13 |
| 2009* | | | | | | | |
| Avg Monthly Benefit | | $ 620 | $ 1,117 | $ 1,452 | $ 2,165 | $ 3,475 | $ 2,811 |
| Avg Monthly Final Avg Comp. | | $ 3,474 | $ 3,823 | $ 3,671 | $ 4,281 | $ 5,775 | $ 3,942 |
| Number of Active/EOSP retirees | | 14 | 13 | 12 | 23 | 15 | 9 |
| 2008* | | | | | | | |
| Avg Monthly Benefit | | $ 645 | $ 1,076 | $ 1,502 | $ 2,258 | $ 3,133 | $ 3,944 |
| Avg Monthly Final Avg Comp. | | $ 4,302 | $ 4,542 | $ 3,869 | $ 5,094 | $ 5,310 | $ 6,222 |
| Number of Active/EOSP retirees | | 18 | 16 | 27 | 74 | 84 | 63 |
| 2007 | | | | | | | |
| Avg Monthly Benefit | | $ 648 | $ 725 | $ 1,360 | $ 2,010 | $ 2,999 | $ 3,730 |
| Avg Monthly Final Avg Comp. | | $ 3,947 | $ 2,922 | $ 3,687 | $ 4,258 | $ 5,086 | $ 5,589 |
| Number of Active Retirees | | 12 | 11 | 33 | 42 | 55 | 48 |
| 2006 | | | | | | | |
| Avg Monthly Benefit | | $ 610 | $ 802 | $ 1,304 | $ 1,974 | $ 3,141 | $ 4,001 |
| Avg Monthly Final Avg Comp. | | $ 4,046 | $ 2,803 | $ 3,245 | $ 4,006 | $ 4,970 | $ 5,561 |
| Number of Active Retirees | | 20 | 14 | 25 | 27 | 33 | 20 |
| 2005 | | | | | | | |
| Avg Monthly Benefit | | $ 563 | $ 912 | $ 1,095 | $ 1,803 | $ 3,291 | $ 3,615 |
| Avg Monthly Final Avg Comp. | | $ 3,518 | $ 3,722 | $ 3,017 | $ 3,884 | $ 5,623 | $ 4,883 |
| Number of Active Retirees | | 8 | 3 | 10 | 20 | 17 | 10 |

*includes EOSP Participants still employed and alt. payees receiving benefits

**Tucson Supplemental Retirement System**
**Demographics of Retired and Active Members**
**June 30, 2016**

**Retired Members**

| | Retirees | | | Survivors/Beneficiaries | | |
|---|---|---|---|---|---|---|
| Ages | Male | Female | Total | Male | Female | Total |
| Under 55 | 26 | 34 | 60 | 2 | 16 | 18 |
| 55 to 59 | 130 | 120 | 250 | 0 | 20 | 20 |
| 60 to 64 | 310 | 239 | 549 | 6 | 29 | 35 |
| 65 to 69 | 468 | 236 | 704 | 6 | 47 | 53 |
| 70 to 74 | 294 | 151 | 445 | 3 | 54 | 57 |
| 75 to 79 | 172 | 98 | 270 | 2 | 59 | 61 |
| 80 to 84 | 136 | 49 | 185 | 5 | 50 | 55 |
| 85 to 89 | 51 | 32 | 83 | 2 | 24 | 26 |
| 90 to 94 | 18 | 16 | 34 | 4 | 19 | 23 |
| 95 to 100 | 6 | 4 | 10 | 1 | 6 | 7 |
| 101 and over | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1,611 | 979 | 2,590 | 31 | 324 | 355 |

**Active Members**

| | Active Members | | | Percentage Distribution | | |
|---|---|---|---|---|---|---|
| Ages | Male | Female | Total | Male | Female | Total |
| Under 20 | 1 | 0 | 1 | 0.04% | 0.00% | 0.04% |
| 20 to 29 | 73 | 86 | 159 | 2.93% | 3.45% | 6.38% |
| 30 to 39 | 259 | 192 | 451 | 10.38% | 7.70% | 18.08% |
| 40 to 49 | 393 | 330 | 723 | 15.74% | 13.23% | 28.97% |
| 50 to 59 | 542 | 333 | 875 | 21.71% | 13.35% | 35.06% |
| 60 to 69 | 188 | 88 | 276 | 7.54% | 3.53% | 11.07% |
| 70 and over | 8 | 2 | 10 | 0.32% | 0.08% | 0.40% |
| Total | 1,464 | 1,031 | 2,495 | 58.66% | 41.34% | 100.00% |

**Composition of Active TSRS Membership by Tier**

| | **Membership** | **Payroll** | **% of Payroll** |
|---|---|---|---|
| Tier 1 - Fixed Contribution Rates | 1,355 | 69,209,026 | 60.09% |
| Tier 1 - Variable Contribution Rates | 315 | 13,246,459 | 11.50% |
| Tier 2 - Variable Contribution Rates | 825 | 32,727,864 | 28.41% |
| | 2,495 | 115,183,349 | 100.00% |

## Tucson Supplemental Retirement System
## Employee and Employer Contribution Rates
### Last Ten Fiscal Years as of June 30, 2016

| Fiscal Year | | Employee Rate (percentage) | | Employer Rate (percentage) | | Total Contribution (percentage) |
|---|---|---|---|---|---|---|
| | | Fixed | Variable | Fixed | Variable | |
| 02/03 | | 5.0 | n/a | 8.41 | n/a | 13.41 |
| 03/04 | | 5.0 | n/a | 11.17 | n/a | 16.17 |
| 04/05 | | 5.0 | n/a | 14.06 | n/a | 19.06 |
| 05/06 | | 5.0 | n/a | 14.83 | n/a | 19.83 |
| 06/07* | | 5.0 | 7.5 | 15.04 | 12.54 | 20.04 |
| 07/08* | | 5.0 | 8.084 | 15.21 | 12.126 | 20.21 |
| 08/09* | | 5.0 | 7.788 | 14.47 | 11.682 | 19.47 |
| 09/10* | | 5.0 | 8.852 | 17.13 | 13.278 | 22.13 |
| 10/11* | | 5.0 | 9.428 | 18.57 | 14.142 | 23.57 |
| 11/12* | | 5.0 | 11.62 | 24.05 | 17.43 | 29.05 |
| 12/13* | | 5.0 | 13.976 | 29.94 | 20.964 | 34.94 |
| 13/14 | Tier I | 5.0 | | 27.32 | | 32.32 |
| 13/14[1] | Tier I | | 6.715 | | 25.61 | 32.32 |
| 13/14[1] | Tier II | | 5.06 | | 27.26 | 32.32 |
| 14/15 | Tier I | 5.0 | | 27.22 | | 32.22 |
| 14/15[1] | Tier I | | 6.67 | | 25.55 | 32.22 |
| 14/15[1] | Tier II | | 5.14 | | 27.08 | 32.22 |
| 15/16 | Tier I | 5.0 | | 27.23 | | 32.23 |
| 15/16 | Tier I | | 6.62 | | 25.61 | 32.23 |
| 15/16 | Tier II | | 4.91 | | 27.32 | 32.23 |

*Employees hired on or after July 1, 2006 pay a variable rate, w hich changes annually, to 40% of the actuarially recommended contribution rate (ARC) for the system.

Note 1: Effective July 1, 2013, variable rates are based on the normal cost of the Benefit Tier of membership. Numbers show n

# Tucson Supplemental Retirement System
# Benefit and Refund Deductions from Net Position by Type
# Last Ten Fiscal Years

fiscal years ended June 30,

| | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Type of Benefit** | | | | | | | | | | |
| Service Benefits: | | | | | | | | | | |
| Retirees | $ 61,959,726 | $ 59,384,728 | $ 57,542,260 | $ 56,406,478 | $ 48,475,837 | $ 51,377,474 | $ 45,580,606 | $ 40,123,580 | $ 39,940,472 | $ 31,993,340 |
| EOSP lump sum[(1)] | - | - | - | - | 7,656,801 | 1,517,252 | 997,448 | 6,805,342 | 1,495,136 | 4,069,547 |
| Survivors[(2)] | 3,550,465 | 3,422,222 | 3,533,539 | 3,397,302 | 3,166,737 | 2,951,507 | 2,757,941 | 2,700,791 | 2,499,152 | 2,236,330 |
| Disabilty Benefits: | | | | | | | | | | |
| Retirees | 2,033,977 | 2,035,754 | 2,082,396 | 2,066,746 | 2,056,266 | 2,057,473 | 2,015,248 | 1,969,239 | 1,999,565 | 1,847,725 |
| Survivors | 366,328 | 373,754 | 318,879 | 320,954 | 337,767 | 344,176 | 349,299 | 397,556 | 277,235 | 272,980 |
| Total Benefits | $ 67,910,496 | $ 65,216,458 | $ 63,477,074 | $ 62,191,480 | $ 61,693,408 | $ 58,247,882 | $ 51,700,541 | $ 51,996,508 | $ 46,211,560 | $ 40,419,922 |
| **Type of Refund** | | | | | | | | | | |
| Death | $ 699,603 | $ 316,820 | $ 212,489 | $ 316,495 | $ 310,994 | $ 305,536 | $ 250,047 | $ 299,778 | $ 96,935 | $ 70,309 |
| Separation | 1,158,825 | 1,937,365 | 1,871,535 | 2,281,823 | 1,936,231 | 2,045,089 | 1,860,312 | 1,390,177 | 1,168,300 | 1,502,967 |
| Transfers | 676,826 | 141,708 | 440,915 | 32,903 | - | 2,928,607 | 898,085 | 2,655,061 | 4,340,520 | 11,886,941 |
| Total Refunds | $ 2,535,254 | $ 2,395,893 | $ 2,524,939 | $ 2,631,221 | $ 2,247,225 | $ 5,279,232 | $ 3,008,445 | $ 4,345,017 | $ 5,605,755 | $ 13,460,218 |

(1) EOSP - An End of Service Program benefit option became available for the first time in FY2007, allowing retiring employees to accumulate up to one year's worth of benefit payments during their final year of employment

(2) Includes Death in service pension benefits

**Tucson Supplemental Retirement System**
**Retiree Benefit and Service Summary**

| # yrs Retired | Average Benefit (1) | Total Monthly Benefit pmts | # of Retirees (2) | Age at 6/30/16 | | | | | | | | Years of Credited Service | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | <55 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85 + | <10 | 10-19 | 20> |
| <5 | 2,087 | 1,091,673 | 523 | 47 | 136 | 193 | 117 | 23 | 4 | 3 | 0 | 83 | 134 | 306 |
| 5 to 9 | 2,412 | 2,385,960 | 989 | 20 | 117 | 291 | 368 | 156 | 30 | 6 | 1 | 92 | 172 | 725 |
| 10 to 14 | 2,104 | 1,281,107 | 609 | 7 | 9 | 80 | 234 | 186 | 82 | 9 | 2 | 55 | 128 | 426 |
| 15 to 19 | 1,408 | 471,825 | 335 | 4 | 7 | 15 | 26 | 113 | 113 | 54 | 3 | 37 | 87 | 211 |
| 20 to 24 | 1,366 | 331,826 | 243 | 0 | 0 | 3 | 10 | 17 | 74 | 90 | 49 | 23 | 67 | 153 |
| 25 to 29 | 1,361 | 231,369 | 170 | 0 | 1 | 2 | 1 | 7 | 20 | 65 | 74 | 12 | 43 | 115 |
| 30> | 802 | 60,972 | 76 | 0 | 0 | 0 | 1 | 0 | 8 | 13 | 54 | 14 | 28 | 34 |
| | | 5,854,732 | 2945 | 78 | 270 | 584 | 757 | 502 | 331 | 240 | 183 | 316 | 659 | 1970 |

Notes:
(1) Average Benefit for all retirees is $1,988 per month
(2) # of Retirees includes alternate payees and survivors

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