



City of Tucson, Arizona

TUCSON SUPPLEMENTAL RETIREMENT SYSTEM

A Component of the City of Tucson



**Comprehensive Annual Financial Report
Fiscal Year July 1, 2016 - June 30, 2017**



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

**Comprehensive Annual Financial Report
For Fiscal Year Ended
JUNE 30, 2017**

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



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CITY OF TUCSON, ARIZONA



Introductory



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, 2016

A handwritten signature in black ink, reading "Jeffrey R. Emer". The signature is written in a cursive, flowing style.

Executive Director/CEO



December 30, 2017

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, 2017, 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 2017 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 fourth consecutive year, the System’s funded status improved, rising from 71.1% to 74.1% for the year ended June 30, 2017. The 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, 2017, the System's funded ratio increased from 71.1% to a 74.1% funded level on an actuarial basis. On a market basis, the System's funded ratio increased from 70.6% to 76.2%. The actuarial accrued liability increased from \$1,030.7M to \$1,036.7M an increase of .58%. The actuarial value of assets allocated to funding and available for benefits increased by 4.7%, from \$732,926,710 to \$767,988,402. The unfunded actuarial accrued liability decreased by \$29,069,321, or 9.8% in the current year. The System experienced an asset gain of \$19.4 million during fiscal year 2017. The market value of assets returned greater than 7.25% during the year; thereby creating the observed gains. The changes in accrued actuarial liability are primarily due to salary increases less than expected.

Investment Activities

Net investment income amounted to \$97,867,625. 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 14.77% (gross of fees). For the last three and five years, the System had annualized returns of 7.1% and 11.0%, 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, 2017 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, \$33.5 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

In January 2017, the Board voted to amend the interest rate allocated to member account balances from 6% to 3%. The interest rate crediting of 3% will be less than the total rate of return, better protecting the plan from losses due to "over-crediting". While the savings are not significant to the plan, the policy of aligning the risk with return will create a platform for using the dollars in manner befitting the employees.

The Plan continues to see positive momentum and funding progress as a result of the rounding policy the Board adopted in FY 2014. As a result of the rounding policy, an excess of \$2M in contributions was made in FY 2017 which further aided in the funded status of the Plan. The Board also finalized an executive summary for the rounding policy which aimed to refine language and clarify terminology for ease of interpretation and understanding.

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 vi 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, Jamie Leon-Guerrero, Administrative Assistant, Silvia Navarro, Treasury 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, 2016. This was the 21st 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.

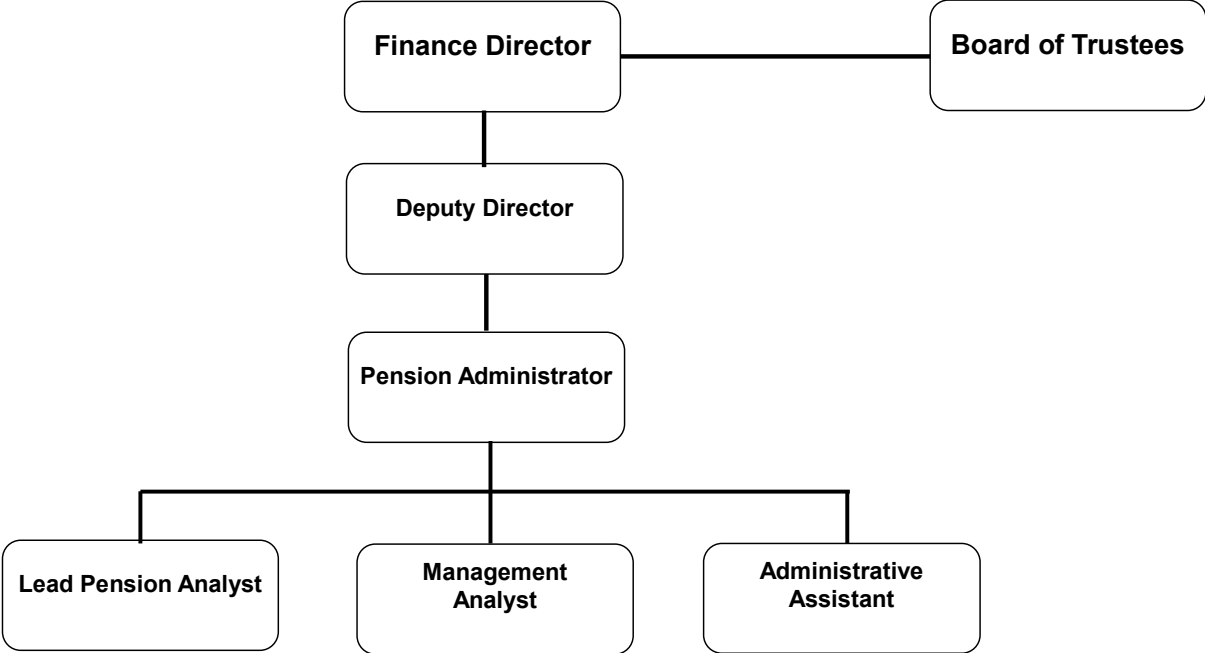
A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

Respectfully submitted,



Art Cuaron, MBA
Interim Pension Administrator
Tucson Supplemental Retirement System

Organization Chart



Administrative Organization

BOARD OF TRUSTEES

Robert Fleming
Chairman

Kevin Larson
City Manager's Appointee

Pete Saxton
Finance Director

Ana Urquijo
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

HeinfeldMeech
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

Fidelity Investments
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

CITY OF TUCSON, ARIZONA



Financial

Financial



INDEPENDENT AUDITOR'S REPORT

Board of Trustees
Tucson Supplemental Retirement System

Report on the Financial Statements

We have audited the financial statements of the Tucson Supplemental Retirement System (System), a pension trust fund of the City of Tucson, Arizona, which comprise the Statement of Fiduciary Net Position as of June 30, 2017, and the related Statement of Changes in Fiduciary Net Position for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with 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.

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the net position of the Tucson Supplemental Retirement System as of June 30, 2017, and the respective changes in net position, for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters**Required Supplementary Information**

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Required Supplementary Information, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the 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 financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the System's financial statements. The Introductory Section, Other Supplementary Information, Investment Section, Actuarial Section, and Statistical Section, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements.

The Other Supplementary Information, as listed in the table of contents under the Financial Section, is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Other Supplementary Information is fairly stated, in all material respects, in relation to the financial statements as a whole.

The Introductory Section, Investment Section, Actuarial Section, and Statistical Section have not been subjected to the auditing procedures applied in the audit of the 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 12, 2017, on our consideration of the Tucson Supplemental Retirement 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 results of that testing, and not to provide an opinion on the 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 Tucson Supplemental Retirement System's internal control over financial reporting and compliance.



Heinfeld, Meech & Co., P.C.
Tucson, Arizona
December 12, 2017

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, 2017. 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, 2017 was \$789,942,937 (net position restricted for pensions). The net position is available to meet TSRS's ongoing obligations to plan participants and their beneficiaries.
- TSRS's increase in total net position restricted for pension benefits was \$63,160,058. The increase of 8.7% over the prior year was primarily a result of 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, 2017, the date of our last actuarial valuation, the funded ratio for TSRS was 74.1% on an actuarial basis, 76.2% using the market value basis.
- Revenues (Additions to Plan Net Position) for the year were \$137,130,384, which includes member and employer contributions plus transfers from other systems and contributions from other sources totaling \$39,452,334, investment earnings income and securities lending income and expense of \$12,774,334 and a net gain in fair value of investments of \$89,165,007 reduced by investment expenses of \$4,261,291.
- Expenses (Deductions from Plan Net Position) increased from \$71,343,457 in the prior year to \$73,970,326 or approximately 3.7%. The net increase in deductions primarily resulted from an increase in pension benefits paid of \$3,148,594. The increase in benefits was caused in part due to the timing of the FY 2016 retirement incentive offered by the City.

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.

Financial Analysis

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, 2017 with \$789,942,937 in net position held in trust for payment of ongoing obligations to plan participants and their beneficiaries.

Net Position of the Plan

Assets	6/30/17	6/30/16	% change
Cash, Cash Equivalents and Receivables	5,066,161	4,828,822	4.9%
Investments	788,228,746	722,370,463	9.1%
Securities Lending Cash Collateral	28,692,389	20,407,804	40.6%
Total Assets	\$ 821,987,296	\$ 747,607,089	9.9%
Liabilities			
Accounts Payable and Other Payables	173,674	416,406	-58.3%
Due to Securities Lending Borrowers	28,692,389	20,407,804	40.6%
Due to Brokers	3,178,296	-	100.0%
Total Liabilities	\$ 32,044,359	\$ 20,824,210	53.9%
Total Net Position	\$ 789,942,937	\$ 726,782,879	8.7%

At June 30, 2017, the Total Net Position Restricted for Pension of \$789,942,937 was available for payment of pension benefits, as shown in the Statement of Plan Position on page 8. This amount represents an increase of 8.7% from June 30, 2016.

Additions to Plan Net Position

	6/30/17	6/30/16	% change
Employer Contributions	31,823,694	33,175,307	-4.1%
Employee Contributions	7,439,065	7,083,385	5.0%
Net gain (loss) in Fair Value of Investments	89,165,007	8,758,641	918.0%
Investment and securities lending income (net)	8,702,618	9,315,456	-6.6%
Total Additions	\$ 137,130,384	\$ 58,332,789	135.1%

Employer contributions decreased by \$1,351,613; or 4.1%, and employee contributions increased by \$355,680, or 5.0%. A total of \$1,258,421 was received from employees purchasing service credits, and transfers into the Plan from other systems totaled \$65,255 during this fiscal year. Net gain in Fair Value of Investments increased by \$80,406,366, or 918.0% over the prior year; and income from investment and securities lending decreased for the current year by \$612,838 or 6.6%.

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 2017 were \$73,970,326 representing an increase of 3.7% from fiscal year 2016 deductions. An increase in the payment of retirement benefits of \$3,148,594 was the largest factor contributing to the increase in deductions. Additional deductions were transfers to other systems in the amount of \$6,856 and member contribution refunds in the amount of \$2,147,211.

Deductions from Plan Net Position

	06/30/17	06/30/16	% change
Retirement Benefits	71,059,090	67,910,496	4.6%
Refund of Contributions	2,147,211	2,499,342	-14.1%
Transfers to Other Retirement Plans	6,856	35,912	-80.9%
Administrative Expenses	756,268	786,028	-3.8%
Miscellaneous Deductions	901	111,679	100.0%
Total Deductions	\$ 73,970,326	\$ 71,343,457	3.7%
Net Increase/(Decrease) in Plan Position	\$ 63,160,058	\$ (13,010,668)	585.4%

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, 2017, the balance in this reserve account increased by \$716,823 to \$133,917,363.

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, 2017 by \$6,918,125 to \$706,495,829.

The impact of gains or losses recognized during the plan year ended June 30, 2017 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 increased by \$55,525,110 to a negative ending balance of \$50,470,255.

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, 2017**

	<u>Pension Trust</u>
<u>ASSETS</u>	
Cash and Cash Equivalents	\$ 1,681,100
Interest & Dividends Receivable	1,727,372
Due from Brokers	1,657,689
Short Term Investments	17,082,604
Securities Lending Cash Collateral	28,692,389
U.S. Treasuries, Agencies & Other Governmental Bonds	100,060,978
Bonds and Preferred Stock	49,334,317
U.S. Equity	260,806,435
International Bonds & Other Fixed Income Instruments	39,922,393
International Equity & Comingled Equity Funds	198,827,182
Real Estate & Comingled Real Estate Funds	74,665,411
Infrastructure Investment Funds	47,529,426
Total assets	821,987,296
 <u>LIABILITIES</u>	
Accounts Payable	167,430
Accrued Payroll Liabilities	6,045
Due to Securities Borrowers	28,692,389
Due to Brokers	3,178,296
Refundable Deposits	199
Total liabilities	32,044,359
 <u>NET POSITION</u>	
Restricted for Pensions	\$ 789,942,937

See Accompanying Notes to Financial Statements

**Tucson Supplemental Retirement System
Statement of Changes in Fiduciary Net Position
Year Ended June 30, 2017**

Additions:	
Employer Contributions	\$ 31,823,694
Employee Contributions	7,439,065
Net Increase in Fair Value of Investment	89,165,007
Interest, Dividends and Other Income	12,688,833
Securities Lending Income	142,453
Less: Investment Activity Expense	(4,261,291)
Less: Securities Lending Expense	(56,952)
Miscellaneous Additions	189,575
Total additions	<u>137,130,384</u>
Deductions:	
Payments to Participants	71,059,090
Refunds and Transfers to Other Plans	2,154,067
Administrative Expense	756,268
Miscellaneous Deductions	901
Total deductions	<u>73,970,326</u>
Change in net position	<u>63,160,058</u>
Net position, beginning of year	726,782,879
Net position, end of year	<u><u>\$789,942,937</u></u>

See Accompanying Notes to Financial Statements

**Tucson Supplemental Retirement System
Notes to Financial Statements
Year Ended June 30, 2017**

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, 2017.

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, 2017 are as follows:

Total Pension Liability	\$	1,036,687,317
Plan's Fiduciary Net Position		<u>789,942,937</u>
Net Pension Liability		<u>246,744,380</u>

- Plan Fiduciary Net Position as a Percentage of Total Pension Liability 76.20%
- Covered Employee Payroll \$ 117,006,431
- Net Pension Liability as a Percentage of Covered Employee Payroll 210.88%

J. Tax Status of the Plan – The System applied for an IRS determination letter in January 2015, and received a favorable determination (qualified status) from the IRS on January 11, 2017.

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, 2017 is as follows:

Membership – number of:	
Retirees and Beneficiaries	2,974
Inactive, Non-retired Members (67 non vested)	380
Active plan participants	<u>2,526</u>
Total Membership	<u>5,880</u>

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, 2017, the employee blended contribution rate was 5.11%. 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 2017 was 6.75%. For Tier II members (hired after July 1, 2011), the contribution rate for fiscal year 2017 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, 2017, allocations were based on rates of return of 3.00% per annum. Any unallocated earnings remain in unreserved net position.

The net position at June 30, 2017, consisted of the following components:

Reserved for employee contributions	\$	133,917,363
Reserved for retirement benefits		706,495,829
Unreserved net position (deficit)		<u>(50,470,255)</u>
Net Position	\$	<u>789,942,937</u>

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, 2017.

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, 2017 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 are 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 \$1,681,100 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 has 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, 2017:

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	\$ 100,060,978	(29,745) (1)	1,179,199	98,911,524
Corporate Bonds & Other Fixed Income Instruments	47,216,939	-	21,625,137	25,591,802
U.S. Equity & Commingled Equity Funds	237,918,324	151,963,786	-	85,954,538
Non-U.S. Issues not on Securities Loan:				
International Bonds & Other Fixed Income Instruments	38,417,099	(7,207)	36,797,206	1,627,100
International Equity & Commingled Equity Funds	197,320,836	75,832,517	-	121,488,319
Subtotal	620,934,176	227,759,351	59,601,542	333,573,283
Investments Held by Broker-Dealers Under Securities Loans with Cash Collateral:				
U.S. Corporate Bonds & Other Fixed Income Instruments	2,117,378	-	2,117,378	-
U.S. Equity	22,888,111	22,888,111	-	-
International Bonds & Other Fixed Income Instruments	1,505,294	-	1,505,294	-
International Equity	1,506,346	1,506,346	-	-
Subtotal	28,017,129	24,394,457	3,622,672	-
Securities Lending Short-Term Collateral Investment Pool	28,692,389	-	-	28,692,389
Money Market Funds/Short-Term Investments	17,082,604	-	12,170,475	4,912,129
Real Estate & Commingled Real Estate Funds	74,665,411	-	-	74,665,411
Infrastructure Investment Funds	47,529,426	-	-	47,529,426
Subtotal	167,969,830	-	12,170,475	155,799,355
Total Deposits and Investments	\$ 816,921,135	252,153,808	75,394,689	489,372,638

(1) A negative value in the instruments noted in the table 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.

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, 2017, 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%	5.80%
Small/Mid Cap U.S. Equities	8%	7.05%
International Equities	25%	6.70%
Fixed Income	27%	0.80%
Real Estate	9%	4.65%
Infrastructure	5%	5.75%
Total	100%	
Weighted Average Arithmetic Returns, in proportion to asset allocation		4.67%

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, 2017.

Rate of Return – For the year ended June 30, 2017, the annual money-weighted rate of return on the Plan’s investments, net of pension plan investment expenses, was 14.26%. 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:

Current Single Discount		
1% Decrease	Rate Assumption	1% Increase
6.25%	7.25%	8.25%
\$ 351,677,165	\$ 246,744,380	\$ 157,515,807

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, 2017:

<u>Investment Type</u>	<u>Holdings</u>	<u>Average Credit Rating (1)</u>	<u>Fair Value</u>	<u>Percent of Total</u>
Cash & Short Term Investment Funds:				
Cash and Cash Equivalents	30	Aaa	17,462,350	
Futures	2	Aaa	(3,625) (2)	
Fixed Income Sw aps & Options	6	Aaa	(376,121) (2)	
Subtotal	<u>38</u>		<u>17,082,604</u>	8.28%
U.S. Agency & Other Governmental Obligations:				
Municipal Bonds	6	B3	1,179,199	
Futures	3	Aaa	(29,745) (2)	
BlackRock U.S. Debt Fund	1	Aaa	98,911,524	
Subtotal	<u>10</u>		<u>100,060,978</u>	48.48%
U.S. Corporate Bonds & Other Fixed Income Instruments:				
Asset Backed Securities	2	Baa3	194,235	
Collateralized Mortgage Obligations	5	Aa1	425,544	
Fixed Income Sw aps & Options	36	B3	330,854	
Banking & Finance	23	Ba3	7,330,866	
Health Care	1	Ba1	982,125	
Oil, Gas & Chemicals	11	Baa3	2,825,196	
Communications	1	Ba1	426,188	
Utilities	7	Baa3	1,524,343	
Other Corporate Issues	48	Ba2	12,956,681	
PIMCO Private Mortgage Sector Fund	2	Aa1	22,338,285	
Subtotal	<u>136</u>		<u>49,334,317</u>	23.90%
International Bonds & Other Fixed Income Instruments:				
Banking & Finance	16	Ba3	6,670,743	
Fixed Income Sw aps & Options	40	Ba1	(67,497) (2)	
Government Bonds	30	Ba2	11,422,648	
Futures	4	Aaa	(7,207) (2)	
Communications	5	B1	1,682,799	
Oil, Gas & Chemicals	12	Ba1	5,250,151	
Utilities	3	B3	1,487,834	
Other Corporate Issues	39	Ba3	13,482,921	
Subtotal	<u>149</u>		<u>39,922,392</u>	19.34%
TOTAL	<u>184</u>		<u>206,400,291</u>	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, 2017:

Investment Type	Maturity Structure				Fair Value
	Investment Maturities (in Years)				
	Less Than 1	1 - 5	6 - 10	More Than 10	
Cash & Short Term Investment Fund	\$ 17,082,604	\$ -	\$ -	\$ -	\$ 17,082,604
U.S. Agency & Other Governmental Obligations	(258) (1)		(95,191) (1)	1,244,903	1,149,454
BlackRock U.S. Debt Fund	-	-	98,911,524	-	98,911,524
U.S. Corporate & Other Fixed Income Instruments	24,937,976	13,582,263	9,455,888	1,358,190	49,334,317
International Bonds & Other Fixed Income Instruments	761,581	11,661,848	20,228,717	7,270,247	39,922,392
TOTAL	\$ 42,781,903	\$ 25,244,111	\$ 128,500,938	\$ 9,873,340	\$ 206,400,291

Effective Duration:

Active Account 5.10 years

Passive Account 5.73 years

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

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

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, 2017:

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	\$ (30,867)		\$ 606,228				\$ 575,361	0.073%
Brazil Real	30,421						30,421	0.004%
Canadian Dollar	44,325		4,527,518				4,571,843	0.580%
Chinese Yuan Renminbi							-	0.000%
Euro Currency Unit	306,727	14,393,488	16,785,981		21,925,732	(9,649)	53,402,279	6.775%
Japanese Yen	29,718		8,698,689				8,728,407	1.107%
Malaysian Ringgit							-	0.000%
Mexican Peso	32						32	0.000%
New Taiwan Dollar							-	0.000%
Polish Zloty	12,459						12,459	0.002%
British Pound Sterling	126,434	4,728,713	19,303,036			2,442	24,160,625	3.065%
Singapore Dollar	701						701	0.000%
S. African Comm Rand	9,450						9,450	0.001%
South Korean Won							-	0.000%
Swedish Krona			622,431				622,431	0.079%
Swiss Franc	96		8,928,929				8,929,025	1.133%
Turkish Lira	1,848						1,848	0.000%
Currency Subtotals	531,344	19,122,201	59,472,812	-	21,925,732	(7,207)	101,044,882	12.819%
U.S. Dollar	16,554,883	169,820,440	400,572,806	74,665,411	25,603,694	(33,370)	687,183,864	87.181%
TOTAL	<u>\$17,086,227</u> 2.17%	<u>\$188,942,641</u> 23.97%	<u>\$460,045,618</u> 58.36%	<u>\$74,665,411</u> 9.47%	<u>\$47,529,426</u> 6.03%	<u>\$ (40,577)</u> -0.01%	<u>\$788,228,746</u> 100%	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, 2017, the carrying amount and fair value of securities on loan was \$28,017,129. 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, 2017, 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, 2017. 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 (3)	Principal Risk
Government Futures	23,600,000	\$ 19,421,684	\$ 30,850,669	Interest Rate
Options	(800,000)	\$ 23,915	\$ (3,625)	Credit
Currency Forwards (Net)	9,782,078	\$ (5,129,450)	\$ 19,337,317	Foreign Currency
Forward Transactions (2)	1,900,000	\$ 1,907,917	\$ 1,907,917	Credit
Interest Rate Swaps	(39,450,000)	\$ 1,014,716	\$ 229,565	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) Not including Mortgage TBA
- (3) 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 positions.

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, 2017, 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, 2017 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, 2017 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, 2017.

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, 2017

	2017	2016	2015	2014
Total Pension Liability				
Service Cost	\$ 13,130,902	\$ 14,279,065	\$ 15,753,944	\$ 14,825,019
Interest Cost	72,547,402	72,013,831	70,688,775	66,915,612
Differences Between Expected and Actual Experience	(6,472,776)	(6,529,764)	(7,815,270)	325,889
Changes of Assumptions	-	-	(31,210,057)	76,945,563
Benefit Payments, Including Refunds of Member Contributions	(73,213,157)	(70,445,750)	(67,612,351)	(66,002,013)
Net Change in Total Pension Liability	<u>5,992,371</u>	<u>9,317,382</u>	<u>(20,194,959)</u>	<u>93,010,070</u>
Total Pension Liability - Beginning	1,030,694,946	1,021,377,564	1,041,572,523	948,562,453
Total Pension Liability - Ending	<u>\$ 1,036,687,317</u>	<u>\$ 1,030,694,946</u>	<u>\$ 1,021,377,564</u>	<u>\$ 1,041,572,523</u>
Plan Fiduciary Net Position				
Contributions - Employer	\$ 31,823,694	\$ 33,175,307	\$ 33,985,523	\$ 34,189,288
Contributions - Member	7,439,065	7,083,385	7,531,845	7,338,543
Net Investment Income	97,535,597	17,820,325	30,684,188	119,729,154
Benefit Payments, Including Refunds of Member Contributions	(73,213,157)	(70,445,750)	(67,612,351)	(66,002,013)
Administrative Expense	(756,268)	(786,028)	(650,405)	(735,739)
Other	331,127	142,093	118,247	171,077
Net Change in Plan Fiduciary Net Position	<u>63,160,058</u>	<u>(13,010,668)</u>	<u>4,057,047</u>	<u>94,690,310</u>
Plan Fiduciary Net Position - Beginning	726,782,879	739,793,547	735,736,500	641,046,190
Plan Fiduciary Net Position - Ending	<u>\$ 789,942,937</u>	<u>\$ 726,782,879</u>	<u>\$ 739,793,547</u>	<u>\$ 735,736,500</u>
Net Pension Liability - Ending	<u>\$ 246,744,380</u>	<u>\$ 303,912,067</u>	<u>\$ 281,584,017</u>	<u>\$ 305,836,023</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	76.20%	70.51%	72.43%	70.64%
Covered Employee Payroll	\$ 117,006,431	\$ 115,183,349	\$ 123,414,560	\$ 126,639,423
Net Pension Liability as a Percentage of Covered Employee Payroll	210.88%	263.85%	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**

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual Money-Weighted Rate of Return, Net of Investment Expense	14.26%	2.38%	4.17%	19.11%

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
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
2017	2015	25.52	27.50	31,823,694	-1.98	\$ (2,428,903)	123,414,560	115,183,349

Summary of Actuarial Methods and Assumptions**NOTES TO SCHEDULE OF CONTRIBUTIONS****Valuation Date:**

June 30, 2015

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.

Disabled retirement: RP-2000 Disabled Mortality Table for males and females.

Other Information:

Notes There were no benefit changes during the year.

OTHER SUPPLEMENTAL INFORMATION

Supporting Schedules
June 30, 2017
 Schedule of Administrative Expenses

Personal Services	
Staff Salaries	\$ 237,507
Fringe Benefits	104,808
Total Personal Services	<u>342,315</u>
Professional Services	
Accounting	104,000
Actuary	119,518
Audit	24,300
Physician Services	8,100
Legal	44,663
Total Professional Services	<u>300,581</u>
Other Administrative Expenses	
Computer Software Maint. & Hosting	39,490
Insurance	20,901
Other	15,991
Postage	17,000
Printing and Supplies	15,971
Professional Development	4,019
Total Other Administrative Expense	<u>113,372</u>
Total Administrative Expenses	<u>\$ 756,268</u>

Schedule of Investment Services Expense

Trust & Custody	\$ 292,058
Investment Consultant	157,926
Investment Management	3,811,307
Total Investment Expenses	<u>\$ 4,261,291</u>

CITY OF TUCSON, ARIZONA



Investment

Investment



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October 2, 2017

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, 2017.

Economic Overview as of June 30, 2017

The prevailing theme of the second half of 2016 was “risk-on.” Investor angst over the Brexit vote in June was short lived. The U.S. presidential election and geopolitical turmoil on several fronts did not dampen investors’ risk appetite or their quest for yield. Improving energy prices provided fuel for the equity market surge. The dollar started July at 1.10 versus the euro and ended 2016 at 1.04 with most of the strengthening occurring post- election. Expectations of deregulation and lower taxes after Trump’s victory caused stocks to rise and bonds to fall. U.S. labor markets thrived July through December and added an average of 193,000 jobs every month. The Federal Open Market Committee (FOMC) was encouraged by the positive jobs numbers and decided unanimously to raise the target overnight rate to 0.50-0.75% in December. In the euro zone, macroeconomic data started to show improvement towards the end of 2016. The European Central Bank (ECB) extended their quantitative easing program through December 2017, but with the stipulation that monthly bond purchases be cut by 20 billion euro in March. Japan continued to tinker with its quantitative easing program in an effort to spur inflation and economic growth and introduced a new tool called “yield curve control” in the third quarter of 2016.

The first half of 2017 was a period of shifting sentiment. The “risk-on” environment that prevailed throughout the end of 2016 lasted into the first months of the new calendar year. The dollar strengthened vs the yen and the euro, and the Dow closed above 20,000 for the first time ever on January 25. In March, momentum stalled when doubts surfaced over the viability of the Republicans’ health care reform bill and the administration’s overall ability to enact promised regulatory changes. The dollar began to weaken and slid through the end of June, boosting returns of non-U.S. developed and emerging market equities. U.S. equities regained their momentum in April and the steady gains lasted through the following months until hawkish comments by ECB President Mario Draghi sent stocks tumbling at the end of June. Employers added an average of 180,000 positions to payrolls each month the first half of 2017. The FOMC, encouraged by the positive jobs numbers, decided to raise the target overnight rate twice during the first six months of the calendar year. The target range was 1.0-1.25% at the end of June. However, the FOMC continues to express concern over weak U.S. inflation figures. The ECB and Bank of Japan left rates unchanged and held tight to their respective quantitative easing strategies.

U.S. GDP growth has been positive over the last fiscal year. Based on the most recent estimate, quarterly annualized GDP growth for the second quarter 2017 was 3.0%. Euro zone GDP rose 2.3% annualized during the same time period. In both regions, while GDP growth and employment figures continue to improve, weak pricing pressure continues to be a cause of concern.

Total Fund Review

In fiscal year 2017, TSRS returned 14.77% before investment management fees, which ranked 11th percentile versus other public defined benefit plans. TSRS returned 14.26% net of fees for the fiscal year, which was above the benchmark return of 12.04%.

Domestic Equity Overview

The fiscal year ended June 30, 2017 brought record breaking performance 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 18.51%. Small cap stocks performed better than large cap stocks during the time period. The Russell 1000, a gauge of large cap stock performance, was beaten by its small cap peer by a wide margin. The Russell 1000 rose 18.03% while the Russell 2000 surged an impressive 24.60%. Growth stocks outperformed value stocks. The Russell 3000 Growth Index advanced 20.72% versus a gain of 16.21% for the Russell 3000 Value Index. During the fiscal year ended June 30, 2017 the TSRS domestic equity investments returned 20.96% net of fees.

International Equity Overview

Developed International equity markets, as represented by the MSCI EAFE Index, benefitted from rising markets in fiscal year 2017. The index rose 20.27%, beating the -10.16% performance in fiscal year 2016. In a departure from U.S. equity trends, growth lost out to value in the international developed equity space. For the trailing twelve-months ended June 30, 2017, the MSCI EAFE Growth Index gained 15.70% while the MSCI EAFE Value Index rose an impressive 25.01%. Emerging markets also made a strong showing for the fiscal year. The MSCI Emerging Markets Index surged 23.75% over the trailing 12-months ended June 30, 2017. Overall, it was a solid year for international stock markets. For the fiscal year of 2017, the international equity asset class returned 20.24% net of fees for TSRS.

Domestic Fixed Income Overview

The U.S. bond market, as measured by the Bloomberg Barclays Aggregate Bond Index, fell 0.31% in fiscal year 2017. The yield curve shifted upward and flattened throughout the period, punishing many bond holders. The Bloomberg Barclays Government Index fell 2.18% over the 12-month period. Given the environment, the Bloomberg Barclays Government Long Index dropped 6.96%. The Bloomberg Barclays Credit Index rose 1.84% for the same time period as spreads compressed versus Treasuries. High yield bonds were a top returning sector, putting up 12.70% over the trailing 12-months (Bloomberg Barclays Corporate High Yield Index). For the fiscal year 2017, TSRS's domestic fixed income investments returned 4.29% net of fees.

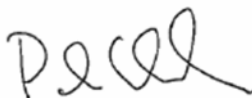
Real Estate Overview

The NCREIF Property Index, a measure of the private real estate market, gained 6.97% during the 2017 fiscal year. The index was positive in each of the four quarters, extending its winning streak to 30 straight quarters. During the year ended June 30, 2017 TSRS's real estate portfolio returned 7.07% 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, 2017, the infrastructure investment program for TSRS returned 11.24% net of fees.

Cordially,



Paul Erlendson
Senior Vice President



Gordon Weightman, CFA
Senior 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%

¹This Manager was formerly known as Pyramis Global Advisors

Investment Results by Year
Last Ten Fiscal Years Ended June 30, 2017

<u>Year Ended</u>	<u>Annual Return</u>	<u>3-Year Annualized Return</u>	<u>5-Year Annualized Return</u>	<u>10-Year Annualized Return</u>
6/30/17	14.8%	7.1%	11.0%	6.0%
6/30/16	2.4%	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%

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, 2017**

	Annualized Returns (1)		
	One Year	Three Years	Five Years
TOTAL PORTFOLIO			
TSRS	14.77%	7.11%	11.04%
Custom Benchmark (2)	12.04%	5.98%	9.46%
EQUITY FUNDS			
Alliance S&P 500 Index	17.80%	9.58%	14.57%
S & P 500 Index	17.90%	9.61%	14.63%
PIMCO StocksPlus S & P 500 Index	19.11%	9.57%	15.89%
	17.90%	9.61%	14.63%
BlackRock Russell 1000 Value Index	15.61%	7.42%	13.99%
Russell 1000 Value Index	15.53%	7.36%	13.94%
T. Rowe Price Large Cap Growth (Inception date: 2/12)	31.65%	12.92%	18.15%
Russell 1000 Growth Index	20.42%	11.11%	15.30%
Champlain Investment Partners (Inception date: 7/10)	22.50%	12.22%	16.99%
Russell Mid Cap Index	16.48%	7.69%	14.72%
Fidelity Institutional Asset Management Small Cap Russell 2000 Index	21.31%	10.09%	16.43%
	24.60%	7.36%	13.70%
Causeway International Opportunities ACWI ex-US (net Div)	23.39%	2.09%	9.96%
	20.45%	1.48%	8.90%
Aberdeen EAFE Plus Equity (Inception date: 4/12)	18.30%	-0.61%	5.33%
MSCI All Country World ex-U.S. Index (Net)	20.45%	0.80%	7.22%
American Century Non U.S. Small Cap (Inception date: 5/16) (4)	20.31%	N/A	N/A
MSCI All Country World ex-U.S. Small Cap	20.32%	N/A	N/A
FIXED INCOME FUNDS			
BlackRock U.S. Debt Fund (Inception date: 1/12)	-21.00%	2.60%	2.35%
Bloomberg Aggregate Bond Index	-31.00%	2.48%	2.21%
PIMCO Custom Fixed Income Custom Index (3)	7.99%	4.81%	5.44%
	3.83%	3.92%	4.51%
REAL ESTATE FUNDS			
JP Morgan Strategic Property Fund	7.94%	10.78%	12.09%
NCREIF ODCE Index	7.87%	11.34%	11.79%
JP Morgan Income and Growth Fund	8.27%	11.46%	14.17%
NCREIF ODCE Index	7.87%	11.34%	11.79%

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 annualized return data is not yet available.

Schedule of Investment Results
For Periods Ended June 30, 2017 (Continued)

	<u>One Year</u>	<u>Annualized Returns (1)</u>	
		<u>Three Years</u>	<u>Five Years</u>
INFRASTRUCTURE FUNDS			
Macquarie European Infrastructure Fund 3 (Funding Completed) CPI + 4%	20.00% 5.50%	5.02% 4.58%	8.51% 5.11%
SteelRiver Infrastructure Fund North America (Funding in progress) CPI + 4%	7.09% 5.50%	10.14% 4.58%	8.00% 11.00%

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, 2017

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	\$ 60,163	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 266	\$ 60,429
T. Rowe Price	Large Cap Growth	54,371	-	-	-	-	-	1,045	55,416
BlackRock Russell Value	Large Cap Value Index	52,997	-	-	-	-	-	-	52,997
PIMCO StocksPlus	Enhanced Index	32,002	-	-	-	-	-	-	32,002
Champlain Investments	Mid-Cap Core	-	31,608	-	-	-	-	686	32,294
Fidelity Institutional Asset Mgmt.	Small-Cap Core	-	29,665	-	-	-	-	391	30,056
Causeway Capital	Foreign Stocks-Value	-	-	77,338	-	-	-	1,189	78,527
Aberdeen Asset Mgmt	Foreign Stocks-Core	-	-	82,301	-	-	-	-	82,301
American Century Investments	Foreign Stocks-Small Cap	-	-	39,188	-	-	-	-	39,188
BlackRock U.S. Debt	U.S. Govt/Credit Bonds	-	-	-	98,912	-	-	-	98,912
PIMCO Custom Fixed Income	U.S. & Foreign Bonds	-	-	-	90,405	-	-	12,120	102,525
JPM Strategic Property Fund	Core Real Estate	-	-	-	-	49,341	-	-	49,341
JPM Income & Growth Fund	Value Added Real Estate	-	-	-	-	25,324	-	-	25,324
Macquarie (MEIF3)	European Infrastructure	-	-	-	-	-	21,926	-	21,926
SteelRiver IFNA	North American Infrastructure	-	-	-	-	-	25,603	-	25,603
Liquidity Fund	Cash & Cash Equivalents	-	-	-	-	-	-	1,386	1,386
TOTAL		\$ 199,533	\$ 61,273	\$ 198,827	\$ 189,317	\$ 74,665	\$ 47,529	\$ 17,083	\$ 788,227

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, 2017

<u>Manager</u>	<u>Actual</u>		<u>Target</u>	
	<u>Amount</u>	<u>Percentage</u>	<u>Amount</u>	<u>Percentage</u>
Alliance Capital	\$ 60,429	7.7%	\$ 63,058	8.0%
T. Rowe Price	55,416	7.0%	55,176	7.0%
BlackRock Russell Value	52,997	6.7%	55,176	7.0%
PIMCO StocksPlus	32,002	4.1%	31,529	4.0%
Large U.S. Stocks	200,844	25.5%	204,939	26.0%
Champlain Investment Partners	32,294	4.1%	31,529	4.0%
Fidelity Institutional Asset Mgmt.	30,056	3.8%	31,529	4.0%
Small/Mid-Cap U.S. Stocks	62,350	7.9%	63,058	8.0%
Causeway Capital	78,527	10.0%	78,823	10.0%
Aberdeen Asset Management	82,301	10.4%	78,823	10.0%
American Century Investments	39,187	5.0%	39,411	5.0%
Foreign (International) Stocks	200,015	25.4%	197,057	25.0%
Total Equities	463,209	58.8%	465,054	59.0%
BlackRock U.S. Debt	98,912	12.5%	106,410	13.5%
PIMCO Custom Fixed Income	102,526	13.0%	106,411	13.5%
Fixed Income (Bonds)	201,438	25.5%	212,821	27.0%
JPM Strategic Property Fund	49,341	6.3%	47,294	6.0%
JPM Income & Growth Fund	25,324	3.2%	23,647	3.0%
Real Estate	74,665	9.5%	70,941	9.0%
Macquarie (MEIF3)	21,926	2.8%	19,706	2.5%
SteelRiver IFNA	25,604	3.2%	19,707	2.5%
Infrastructure	47,530	6.0%	39,413	5.0%
Liquidity Fund	1,387	0.2%	-	0.0%
Total	\$ 788,229	100%	\$ 788,229	100%

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

<u>Asset Class</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
U.S. Stocks	33%	34%	51%	50%	48%
Foreign (International) Stocks	25%	23%	13%	14%	14%
Total Equities	58%	57%	64%	64%	62%
Fixed Income (Bonds)	26%	27%	22%	22%	24%
Real Estate	10%	9%	8%	8%	8%
Infrastructure	6%	7%	6%	6%	6%
Cash	0%	0%	0%	0%	0%
	100%	100%	100%	100%	100%

Ten Largest Bond Holdings
(By Market Value)
June 30, 2017
(dollars in thousands)

<u>Par Value</u>	<u>Bond</u>	<u>Coupon Rate</u>	<u>Due</u>	<u>Rating</u> <u>(1)</u>	<u>Fair Value</u>
\$ 1,550	UBS AG/Samford CT	7.625%	08/17/22	Baa1	1,820
900	Lloyds Bank PLC	7.625%	04/22/25	Baa2	1,575
1,500	Petrobras Mexicanos REGS	2.750%	04/21/25	Baa3	1,540
1,500	Blackstone CQP Hold Co, LP	6.500%	03/20/21	B2	1,507
1,000	International Lease Finance 144A	8.250%	12/15/20	Baa3	1,177
1,000	SFR Group SA	7.375%	05/01/26	B1	1,085
900	Wind Acquisition Finance REGS	7.000%	04/23/21	B3	1,068
900	HCA Inc.	6.500%	02/15/20	Ba1	982
900	Columbia Government International	5.000%	06/15/45	Baa2	905
800	Petrobras Global Finance BV	7.375%	01/17/27	B1	846

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

Ten Largest Stock Holdings
(By Market Value)
June 30, 2017
(dollars in thousands)

<u>Shares</u>	<u>Stock</u>	<u>Fair Value</u>
5,337	Amazon.com Inc.	\$ 5,166
30,156	Apple Inc.	4,343
54,258	Microsoft Corp	3,740
23,296	Facebook, Inc.	3,517
3,572	Alphabet, Inc, Cass A	3,321
1,713	The Priceline Group, Inc.	3,204
30,080	Visa, Inc.	3,821
11,044	The Boeing Company	2,184
79,931	Royal Dutch Shell, PLC.	2,141
2,322	Alphabet, Inc, Class C	2,110

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

Schedule of Fees June 30, 2017

	<u>Assets Under Management</u>	<u>Fees</u>
Investment Manager Fees		
<i>Fixed Income Managers</i>		
BlackRock U.S. Debt	\$ 98,911,525	\$ 44,729
PIMCO (Custom Fixed Income)	102,525,886	543,470
Total Fixed Income	\$ 201,437,411	\$ 588,199
<i>Equity Managers</i>		
Alliance Capital Management	\$ 60,428,903	\$ 21,363
BlackRock Russell Value Index	52,997,112	21,249
T. Rowe Price	55,415,536	269,737
Causeway Capital Management	78,527,406	295,719
Fidelity Institutional Asset Management	30,056,283	228,551
Aberdeen Asset Management	82,301,120	598,703
American Century Investments	39,187,199	329,693
PIMCO StocksPlus	32,002,148	128,632 ⁽¹⁾
Champlain Investment Partners	32,294,034	259,591
Total Equity	\$ 463,209,741	\$ 2,153,238
Liquidity Account	1,386,777	-
<i>Real Estate Managers</i>		
JPM Strategic Property Fund	\$ 49,341,089	\$ 485,109
JPM Income & Growth Fund	25,324,322	255,923
Total Real Estate	\$ 74,665,411	\$ 741,032
<i>Infrastructure Managers</i>		
Macquarie (MEIF3)	\$ 21,925,712	\$ 181,633
SteelRiver IFNA	25,603,694	147,205
Total Infrastructure	\$ 47,529,406	\$ 328,838
Total Assets (Trade date basis)	\$ 788,228,746	
Total Investment Management Fees		\$ 3,811,307
Other Investment Service Fees		
<i>Trust & Custodian Fees</i>		
BNY Mellon		\$ 300,077
<i>Security Lending - Bank & Administration Fees</i>		
BNY Mellon		85,501
<i>Consulting & Performance Management</i>		
Callan Associates Inc.		210,568
Total Other Investment Service Fees		\$ 596,146

⁽¹⁾ For the months of July and August of 2016, the PIMCO StocksPLUS LPB Fund underperformed the S&P 500. As a result, PIMCO did not generate management fees for those two months of the fiscal year ended.

Schedule of Commissions

June 30, 2017

Broker Description	Shares	Commissions	Commissions Per Share
MORGAN STANLEY & CO INC, NY	845,348	9,118	\$ 0.0108
GOLDMAN SACHS & CO, NY	402,037	8,209	0.0204
MERRILL LYNCH INTL LONDON EQUITIES	499,075	6,480	0.0130
CREDIT SUISSE, NEW YORK (CSUS)	767,129	6,354	0.0083
UBS WARBURG, LONDON	394,795	5,765	0.0146
J P MORGAN SECS LTD, LONDON	313,376	4,516	0.0144
CITIGROUP GLOBAL MARKETS LTD, LONDON	144,867	3,498	0.0242
J.P. MORGAN CLEARING CORP, NEW YORK	182,542	3,484	0.0191
MERRILL LYNCH PIERCE FENNER SMITH INC NY	153,117	3,125	0.0204
DEUTSCHE BK SECS INC, NY (NWSCUS33)	239,439	2,569	0.0107
JEFFERIES & CO INC, NEW YORK	104,974	2,495	0.0238
ITG INC, NEW YORK	159,165	2,248	0.0141
STIFEL NICOLAUS	60,109	1,965	0.0327
INSTINET EUROPE LIMITED, LONDON	98,040	1,963	0.0200
BARCLAYS CAPITAL, LONDON (BARCGB33)	68,262	1,828	0.0268
UBS SECURITIES LLC, STAMFORD	109,580	1,764	0.0161
RBC CAPITAL MARKETS LLC, NEW YORK	166,435	1,734	0.0104
PERSHING LLC, JERSEY CITY	96,451	1,682	0.0174
HSBC BANK PLC (MIDLAND BK)(JAC), LONDON	39,877	1,622	0.0407
CITIGROUP GBL MKTS INC, NEW YORK	95,358	1,541	0.0162
BARCLAYS CAPITAL INC./LE, NEW JERSEY	65,073	1,270	0.0195
UBS WARBURG ASIA LTD, HONG KONG	55,463	1,235	0.0223
RAYMOND JAMES & ASSOC INC, ST PETERSBURG	33,629	1,212	0.0361
RBC DOMINION SECS INC, TORONTO (DOMA)	47,548	1,082	0.0228
DAIWA SECS AMER INC, NEW YORK	35,400	1,027	0.0290
VARIOUS BROKERS - LESS THAN \$1,000	851,240	13,879	
TOTAL	6,028,329	\$ 91,666	
AVERAGE COMMISSION RATE			\$ 0.0152

CITY OF TUCSON, ARIZONA



Actuarial

Actuarial



November 3, 2017

The Board of Trustees
Tucson Supplemental Retirement System
Tucson, Arizona

Re: June 30, 2017 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, 2017 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 Assumption 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, 2017 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, 2017 actuarial valuation report. The actuarial methods and assumptions used in the valuation are adopted by the TSRS Board based upon the 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 3, 2017
Page 2

Contribution Rates

There are no recommended changes to the contribution rates for FY 2019. Based on the TSRS funding policy, the recommended employer rate will remain 27.5%, and the recommended employee rates by tier will remain 5.00%, 6.75% and 5.25%. Full details of these calculations are in the June 30, 2017 actuarial valuation report.

The contribution rate in the June 30, 2017 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 2031. 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, 2017 actuarial valuation are those which were in effect on June 30, 2017. 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 assumptions that are based upon the actuary's recommendations are internally consistent and are reasonably based on the actual past experience of 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, 2017, 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 3, 2017
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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, 2017. Please refer to the Tucson Supplemental Retirement System GASB Statement Nos. 67 and 68 Accounting and financial reporting for pensions - June 30, 2017 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.

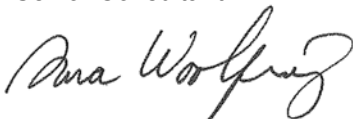
The signing actuaries are independent of the plan sponsor. Leslie Thompson and Dana Woolfrey are Enrolled Actuaries and are Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, both of the undersigned are experienced in performing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

Respectfully submitted,

Gabriel, Roeder, Smith & Company



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



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 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, 2017								
Age	Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	Over 30	
Under 20	1	0	0	0	0	0	0	1
20-24	45	0	0	0	0	0	0	45
25-29	119	18	0	0	0	0	0	137
30-34	132	45	15	0	0	0	0	192
35-39	129	55	58	30	1	0	0	273
40-44	102	51	84	52	21	0	0	310
45-49	86	52	91	92	65	11	0	397
50-54	81	44	83	75	99	31	14	427
55-59	75	37	84	102	70	30	24	422
60-64	48	16	49	59	33	14	25	244
65-69	8	9	10	8	3	11	14	63
Over 70	4	1	4	1	3	1	1	15
Total	830	328	478	419	295	98	78	2,526

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%
6/30/2017	767,988	1,036,687	268,669	74.1%	117,006	229.6%

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	27.50	107.76

Tucson Supplemental Retirement System Solvency Test						
Aggregate Accrued Liabilities For						
Valuation Date	(1)		(2)		(3)	
	Active Member Contributions	Refirants and Beneficiaries	Active Member (Employer Financed Portion)	Valuation Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)
6/30/1991	\$ 44,496,039	\$ 72,419,436	\$ 86,372,322	\$ 164,268,134	100.0 %	100.0 %
6/30/1992	49,238,019	80,342,604	86,902,648	179,569,858	100.0	100.0
6/30/1993	55,146,786	85,832,484	98,492,344	197,281,861	100.0	100.0
6/30/1994	60,424,161	95,449,308	105,838,311	213,540,661	100.0	100.0
6/30/1995	66,316,408	102,511,728	113,211,848	237,712,863	100.0	100.0
6/30/1996	72,294,235	109,572,672	118,739,900	266,740,007	100.0	100.0
6/30/1997	78,991,358	119,508,312	128,878,531	304,684,444	100.0	100.0
6/30/1998	85,106,175	129,345,816	134,514,294	353,056,577	100.0	100.0
6/30/1999	92,367,491	139,805,832	168,050,794	402,875,158	100.0	100.0
6/30/2000	100,413,022	150,527,136	186,809,583	453,953,722	100.0	100.0
6/30/2001	108,696,394	161,740,968	224,921,223	470,671,667	100.0	100.0
6/30/2002	118,913,979	187,508,568	247,524,186	463,101,526	100.0	100.0
6/30/2003	110,195,709	275,193,384	215,784,329	458,856,831	100.0	100.0
6/30/2004	123,643,527	286,698,084	235,009,321	494,986,798	100.0	100.0
6/30/2005	135,346,297	298,395,396	260,129,138	538,788,828	100.0	100.0
6/30/2006	140,387,532	326,828,088	268,577,863	588,227,845	100.0	100.0
6/30/2007	136,028,896	371,497,680	256,012,354	634,763,193	100.0	100.0
6/30/2008	125,331,432	473,240,976	223,632,380	650,227,215	100.0	100.0
6/30/2009	133,633,947	494,923,021	230,928,190	665,298,494	100.0	100.0
6/30/2010	140,224,998	525,200,232	239,055,106	641,818,551	100.0	95.5
6/30/2011	119,049,097	614,497,202	195,062,492	624,664,880	100.0	82.3
6/30/2012	122,240,396	607,450,331	211,247,995	597,106,511	100.0	78.2
6/30/2013	138,342,388	609,558,963	200,661,102	600,330,066	100.0	75.8
6/30/2014	142,418,791	647,811,688	222,162,858	655,997,802	100.0	79.3
6/30/2015	143,648,835	661,292,061	216,436,668	706,773,630	100.0	85.2
6/30/2016	133,200,540	699,577,704	197,916,702	732,926,710	100.0	85.7
6/30/2017	133,917,363	706,495,829	196,274,125	767,988,402	100.0	89.7

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.	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
2017	2,974	71,524,930	1.8	0.8	61.1	24,050	706,495,829	77.4	1,457,270

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%		
6/30/2017	124	\$2,912,641	95	\$1,644,499	2,974	\$ 71,524,930	24,050	0.81%		

SUMMARY OF BENEFIT PROVISIONS

JUNE 30, 2017

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 for 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 choose 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 1/2 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

As of July 1, 2017, interest is credited to member accumulated contributions accounts as simple interest two times per year at an annual interest rate of 3%. 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 18/19 are 6.50% and 4.85%, 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 TUCSON, ARIZONA



Statistical

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 2008 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,

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Additions					
City Contributions	\$ 31,823,694	\$ 33,175,307	\$ 33,985,523	\$ 34,189,288	\$ 34,523,315
Employee Contributions	6,115,389	6,300,714	6,512,180	6,636,833	9,200,262
Purchase of Service	1,258,421	755,299	1,019,665	701,711	1,014,301
Contributions from Other Sources	-	-	-	-	-
Transfers from Other Systems	65,255	27,372	-	-	-
Total Contributions	<u>\$ 39,262,759</u>	<u>\$ 40,258,692</u>	<u>\$ 41,517,368</u>	<u>\$ 41,527,832</u>	<u>\$ 44,737,878</u>
Investment Income					
Net Gain (Loss) in Fair Value of Investments	\$ 89,165,007	\$ 8,758,641	\$ 22,467,139	\$ 111,063,362	\$ 73,705,613
Interest	6,638,087	6,649,353	6,393,666	5,901,539	4,174,559
Dividends	6,050,746	6,408,886	5,915,832	6,786,728	7,158,084
Securities Lending Income	142,453	148,059	163,140	134,036	184,733
Miscellaneous Income	189,575	105,713	20,783	91,630	98,400
Net Income from Investment Activity	<u>\$ 102,185,868</u>	<u>\$ 22,070,652</u>	<u>\$ 34,960,560</u>	<u>\$ 123,977,295</u>	<u>\$ 85,321,389</u>
Less Investment Expenses:					
Securities Lending Fees	\$ 56,952	\$ 59,201	\$ 65,676	\$ 54,589	\$ 78,604
Investment Services	4,261,291	3,937,354	4,092,449	4,022,476	3,805,861
Total Investment Expense	<u>\$ 4,318,243</u>	<u>\$ 3,996,555</u>	<u>\$ 4,158,125</u>	<u>\$ 4,077,065</u>	<u>\$ 3,884,465</u>
Net Investment Gain	<u>\$ 97,867,625</u>	<u>\$ 18,074,097</u>	<u>\$ 30,802,435</u>	<u>\$ 119,900,230</u>	<u>\$ 81,436,924</u>
Total Additions	<u>\$ 137,130,384</u>	<u>\$ 58,332,789</u>	<u>\$ 72,319,803</u>	<u>\$ 161,428,062</u>	<u>\$ 126,174,802</u>
Deductions					
Benefits	\$ 71,059,090	\$ 67,910,496	\$ 65,216,458	\$ 63,477,074	\$ 62,191,480
Refunds	2,147,211	2,499,342	2,395,893	2,524,939	2,631,221
Transfers to Other Systems	6,856	35,912	-	-	-
Administrative Expenses	756,268	786,028	650,405	735,739	689,252
Miscellaneous Deductions	901	111,679	-	-	-
Total Deductions	<u>\$ 73,970,326</u>	<u>\$ 71,343,457</u>	<u>\$ 68,262,756</u>	<u>\$ 66,737,752</u>	<u>\$ 65,511,953</u>
Net Change in Plan Net Position	<u>\$ 63,160,058</u>	<u>\$ (13,010,668)</u>	<u>\$ 4,057,047</u>	<u>\$ 94,690,310</u>	<u>\$ 60,662,849</u>

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

For the Fiscal Years Ending June 30,

	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>
Additions					
City Contributions	\$ 27,429,666	\$ 23,432,916	\$ 23,260,609	\$ 21,279,535	\$ 23,902,286
Employee Contributions	7,685,264	7,562,294	8,041,748	8,156,115	8,591,124
Purchase of Service	1,280,263	3,772,923	1,556,832	1,565,164	5,186,289
Contributions from Other Sources	50,000	50,000	50,000	140,512	130,784
Transfers from Other Systems	204,404	700,009	1,652,656	1,589,190	2,012,917
Total Contributions	<u>\$ 36,649,597</u>	<u>\$ 35,518,142</u>	<u>\$ 34,561,845</u>	<u>\$ 32,730,516</u>	<u>\$ 39,823,400</u>
Investment Income					
Net Gain (Loss) in Fair Value of Investments	\$ 566,661	\$ 106,114,437	\$ 40,143,355	\$ (155,121,980)	\$ (50,256,771)
Interest	6,319,874	6,361,246	7,441,435	11,087,144	10,815,803
Dividends	4,981,339	5,589,052	6,743,309	7,219,584	10,009,694
Securities Lending Income	157,562	124,158	91,625	359,394	1,881,706
Miscellaneous Income	16,833	45,681	3,640	120,820	152,848
Net Income from Investment Activity	<u>\$ 12,042,269</u>	<u>\$ 118,234,574</u>	<u>\$ 54,423,364</u>	<u>\$ (136,335,038)</u>	<u>\$ (27,396,720)</u>
Less Investment Expenses:					
Securities Lending Fees	\$ 68,370	\$ 35,027	\$ 25,401	\$ 197,429	\$ 1,708,227
Investment Services	3,460,730	3,871,641	4,096,007	4,580,028	4,129,652
Total Investment Expense	<u>\$ 3,529,100</u>	<u>\$ 3,906,668</u>	<u>\$ 4,121,408</u>	<u>\$ 4,777,457</u>	<u>\$ 5,837,879</u>
Net Investment Gain	<u>\$ 8,513,169</u>	<u>\$ 114,327,906</u>	<u>\$ 50,301,956</u>	<u>\$ (141,112,495)</u>	<u>\$ (33,234,599)</u>
Total Additions	<u>\$ 45,162,766</u>	<u>\$ 149,846,048</u>	<u>\$ 84,863,801</u>	<u>\$ (108,381,979)</u>	<u>\$ 6,588,801</u>
Deductions					
Benefits	\$ 61,693,408	\$ 58,247,882	\$ 51,700,541	\$ 51,996,508	\$ 46,211,560
Refunds	2,247,225	2,350,626	2,110,360	1,689,956	1,265,235
Transfers to Other Systems	-	2,928,607	898,085	2,655,061	4,340,520
Administrative Expenses	550,604	728,642	672,622	864,382	519,346
Total Deductions	<u>\$ 64,491,237</u>	<u>\$ 64,255,757</u>	<u>\$ 55,381,608</u>	<u>\$ 57,205,907</u>	<u>\$ 52,336,661</u>
Net Change in Plan Net Position	<u>\$ (19,328,471)</u>	<u>\$ 85,590,291</u>	<u>\$ 29,482,193</u>	<u>\$ (165,587,886)</u>	<u>\$ (45,747,860)</u>

**Tucson Supplemental Retirement System
Retired Members by Type of Benefit
As of June 30, 2017**

Amount of Monthly Benefit	Number of Retirees				Type of Retirement ^a							Option Selected ^b						
	1	2	3	4	1	2	3	4	5	6	7	1	2	3	4	5	6	7
\$ 1 - \$ 250	23	13	1	3	26							1					2	5
\$ 251 - \$ 500	101	55	12	7	112							2	1				9	28
\$ 501 - \$ 750	132	66	33	6	131							2					14	42
\$ 751 - \$ 1,000	137	57	32	7	121							2					18	46
\$ 1,001 - \$ 1,250	191	45	27	11	136												37	66
\$ 1,251 - \$ 1,500	186	35	15	4	105							1					36	53
\$ 1,501 - \$ 1,750	232	14	14	2	118						1						36	56
\$ 1,751 - \$ 2,000	247	11	10	1	118							3					43	53
\$ 2,001 - \$ 2,250	207	10	6	1	102						1						23	39
\$ 2,251 - \$ 2,500	202	7	4	2	93							5					18	46
\$ 2,501 - \$ 2,750	163	5	1		91							2					13	35
\$ 2,751 - \$ 3,000	120			1	73												14	19
\$ 3,001 - \$ 3,250	96	1			47												7	27
\$ 3,251 - \$ 3,500	59	1			30							1					7	10
\$ 3,501 - \$ 3,750	62				33												6	16
\$ 3,751 - \$ 4,000	51	1			31												3	14
\$ 4,001 - \$ 4,250	41	1			20												6	12
\$ 4,251 - \$ 4,500	36				23												4	3
\$ 4,501 - and over	166				86												22	29
	2,452	322	156	44	1,496							1	3	19	24	516	317	599

Notes:
^aType of retirement

- 1 - Normal retirement for age and service
- 2 - Beneficiary payment, normal retirement
- 3 - Disability retirement
- 4 - Beneficiary payment, disability retirement

^bOption 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 - Beneficiary receives 75% of member's reduced benefit
- 6 - Beneficiary receives 50% of member's reduced benefit
- 7 - Beneficiary 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, 2017**

Retirement Effective Dates For Fiscal Years Ending June 30	Years of Credited Service							
	<5	5-9	10-14	15-19	20-24	25-29	> 30	
2017								
Avg Monthly Benefit	n/a	\$ 599	\$ 1,184	\$ 1,540	\$ 2,368	\$ 2,812	\$ 4,236	
Avg Monthly Final Avg Comp.	n/a	\$ 3,747	\$ 4,078	\$ 4,409	\$ 5,164	\$ 4,810	\$ 6,099	
Number of Active/EOSP retirees	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
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	

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

**Tucson Supplemental Retirement System
Demographics of Retired and Active Members
June 30, 2017**

Retired Members

Ages	Retirees			Survivors/Beneficiaries		
	Male	Female	Total	Male	Female	Total
Under 55	18	27	45	2	15	17
55 to 59	112	108	220	0	21	21
60 to 64	288	231	519	4	31	35
65 to 69	463	251	714	8	47	55
70 to 74	346	163	509	4	42	46
75 to 79	188	105	293	3	72	75
80 to 84	128	56	184	6	60	66
85 to 89	50	32	82	0	23	23
90 to 94	20	15	35	4	19	23
95 to 100	5	2	7	1	4	5
101 and over	0	0	0	0	0	0
Total	1,618	990	2,608	32	334	366

Active Members

Ages	Active Members			Percentage Distribution		
	Male	Female	Total	Male	Female	Total
Under 20	0	1	1	0.00%	0.04%	0.04%
20 to 29	85	97	182	3.36%	3.84%	7.20%
30 to 39	265	200	465	10.49%	7.92%	18.41%
40 to 49	391	316	707	15.48%	12.51%	27.99%
50 to 59	516	333	849	20.43%	13.18%	33.61%
60 to 69	200	107	307	7.92%	4.24%	12.16%
70 and over	10	5	15	0.39%	0.20%	0.59%
Total	1,467	1,059	2,526	58.07%	41.93%	100.00%

Composition of Active TSRS Membership by Tier

	<u>Membership</u>	<u>Payroll</u>	<u>% of Payroll</u>
Tier 1 - Fixed Contribution Rates	1,260	64,418,311	55.06%
Tier 1 - Variable Contribution Rates	288	12,676,560	10.83%
Tier 2 - Variable Contribution Rates	978	39,911,560	34.11%
	<u>2,526</u>	<u>117,006,431</u>	<u>100.00%</u>

**Tucson Supplemental Retirement System
Employee and Employer Contribution Rates
Last Ten Fiscal Years as of June 30, 2017**

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
16/17 Tier I	5.0		27.23		32.23
16/17 Tier I		6.62		25.61	32.23
16/17 Tier II		4.91		27.32	32.23

*Employees hired on or after July 1, 2006 pay a variable rate, which 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 shown are prior to roundup policy.

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

Type of Benefit	fiscal years ended June 30,									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Service Benefits:										
Retirees	\$ 64,773,949	\$ 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
EOSP lump sum ⁽¹⁾	-	-	-	-	-	7,656,801	1,517,252	997,448	6,805,342	1,495,136
Survivors ⁽²⁾	3,863,588	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
Disability Benefits:										
Retirees	2,056,530	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
Survivors	365,023	366,328	373,754	318,879	320,954	337,767	344,176	349,299	397,556	277,235
Total Benefits	\$ 71,059,090	\$ 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
Type of Refund										
Death	\$ 231,486	\$ 699,603	\$ 316,820	\$ 212,489	\$ 316,495	\$ 310,994	\$ 305,536	\$ 250,047	\$ 299,778	\$ 96,935
Separation	1,389,082	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
Transfers	533,499	676,826	141,708	440,915	32,903	-	2,928,607	898,085	2,655,061	4,340,520
Total Refunds	\$ 2,154,067	\$ 2,535,254	\$ 2,395,893	\$ 2,524,939	\$ 2,631,221	\$ 2,247,225	\$ 5,279,232	\$ 3,008,445	\$ 4,345,017	\$ 5,605,765

⁽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 6/30/17										Years of Credited Service			
				<55	55-59	60-64	65-69	70-74	75-79	80-84	85+	<10	10-19	20>			
<5	2,134	1,233,470	578	36	144	204	158	27	5	4	0	168	123	287			
5 to 9	2,339	1,901,740	813	14	83	244	288	156	23	5	0	91	143	579			
10 to 14	2,248	1,564,630	696	7	5	82	248	222	113	15	4	66	132	498			
15 to 19	1,589	619,524	390	5	8	17	62	125	111	59	3	41	107	242			
20 to 24	1,346	328,435	244	0	0	5	8	19	92	77	43	26	59	159			
25 to 29	1,412	249,870	177	0	1	2	4	5	20	73	72	15	37	125			
30>	826	62,740	76	0	0	0	1	1	4	17	53	17	25	34			
		5,960,411	2,974	62	241	554	769	555	368	250	175	424	626	1,924			

Notes:

(1) Average Benefit for all retirees is \$2,004 per month

(2) # of Retirees includes alternate payees and survivors

