TUCSON SUPPLEMENTAL RETIREMENT SYSTEM
BOARD OF TRUSTEES
MEETING MINUTES

DATE: Thursday, August 25, 2016
TIME: 8:30 a.m.
PLACE: Finance Department Conference Room, 5th floor
City Hall, 255 West Alameda
Tucson, Arizona 85701

Members Present: Robert Fleming, Chairman
Kevin Larson, City Manager Appointee
Rebecca Hill, Interim HR Director
Silvia Amparano, Director of Finance
Michael Coffey, Elected Representative
John O'Hare, Elected Retiree Representative

Staff Present: Dave Deibel, Deputy City Attorney
Neil Galassi, Pension Administrator
Veronica Natividad, Executive Assistant

Guests Present: Claire Beaubien, CTRA Representative
James Hannley, IAPC Representative
Gordon Weightman, Callan Associates
Paul Erlendson, Callan Associates
Kaye Tao, Blackrock
Laura Wallace, Blackrock
Alfred Carley, City of Tucson Employee
Robyn Scott, City of Tucson Employee

Absent/Excused: Jorge Hernández, Elected Representative

Robert Fleming called the meeting to order at 8:32 AM.

A. **Consent Agenda**
1. Approval of July 28th, 2016 TSRS Board Meeting Minutes
2. Retirement ratifications for August 2016
3. July 2016 TSRS Budget Vs Actual Expenses
4. TSRS Portfolio Composition, Transactions and Performance Review July 2016

Chairman Fleming asked for a vote on the approval of the Consent Agenda. The Consent Agenda was approved by a vote of 6-0 (Jorge Hernandez absent/excused).

B. **Disability Applications** *
1. Alfred Carley
2. Robyn Scott

A motion to enter Executive Session was made by Rebecca Hill, 2nd by John O'Hare, and passed by a vote of 6-0 (Jorge Hernandez absent/excused).

A motion to return to Regular Session was made by Kevin Larson, 2nd by Silvia Amparano, and passed by a vote of 6-0 (Jorge Hernandez absent/excused).

A motion to approve the disability retirement application of Alfred Carley was made by John O'Hare, 2nd by Rebecca Hill, and passed by a vote of 6-0 (Jorge Hernandez absent/excused).

A motion to enter Executive Session was made by Michael Coffey, 2nd by Silvia Amparano, and passed by a vote of 6-0 (Jorge Hernandez absent/excused).

A motion to return to Regular Session was made by Silvia Amparano, 2nd by Kevin Larson, and passed by a vote of 6-0 (Jorge Hernandez absent/excused).

A motion to approve the disability retirement application of Robyn Scott was made by Silvia Amparano, 2nd by Rebecca Hill, and passed by a vote of 4-2 (John O'Hare and Michael Coffey dissenting, Jorge Hernandez absent/excused).

Mr. Coffey asked that any updates regarding disability applications be provided to the Board prior to the meeting so that they can review all available information and make an informed vote.

To answer a question asked during executive session Rebecca Hill explained the City's basic long term disability plan provides 60% to a maximum monthly benefit of $4,000 for up to 5 years. The long term disability buy up plan provides 60% to a maximum monthly benefit of $6,000 until age 65.

C. **Investment Activity Reports**

1. Annual Manager Review – Blackrock – Kaye Tao and Laura Wallace

Kaye Tao introduced herself and her colleague Laura Wallace. Ms. Tao stated that they would go over the materials and address most of the questions that were provided to her prior to the meeting. She also welcomed other questions from the Board. Ms. Tao recalled that it had been a couple of years since they had given a report to the Board and appreciated the opportunity. She began by giving a quick overview of Blackrock and what they manage. Blackrock manages about $4.9 Trillion which is well-balanced across various asset classes. The following questions were presented to Blackrock and the following answers were provided:

1. What is the methodology used to track the index for both strategies, is it full replication, stratified sampling, or some other portfolio management strategy?

In managing our passive strategies, BlackRock has a core investment philosophy of Total Performance Management, with the objective of obtaining index-tracking performance through managing returning, risk and cost. For the Russell 1000 Value Strategy, the underlying securities are highly liquid and relatively inexpensive to trade so, we employ a full replication approach. The Fixed Income US Debt Strategy, unlike equities, is not traded on an exchange. Fully replication is infeasible because of costs, uncertain liquidity, and issue scarcity. As such we employ a stratified sampling approach to create a portfolio that closely matches the key characteristics of the index.

2. What is the targeted tracking error for each portfolio and what was it as of 6/30/2015 (please define tracking error for the benefit of Board members who may not be familiar)?

Tracking error is defined as the difference between the fund return and the index return. As of 6/30/2015, the tracking error for the two portfolios are as follows:

Russell 1000 Value Index Fund:
YTD: -0.03%
1-Yr: 0.08%
Since fund inception: 0.05% (annualized, since 10/31/1991)

US Debt Index Fund:
YTD: 0.08%
1-Yr: 0.13%
Since fund inception: 0.06% (annualized, 6/30/1986)

Paul Erlendson stated he had a question about the Russell 1000 Value Index Fund. In the data he saw there was an unusually large aberration in terms of underperforming by around 20 basis points in the 2nd quarter, and asked if that was accurate.

Ms. Tao explained due to the tracking error the fund underperformed by only about 3 basis points for the 2nd quarter and that was mainly due to futures holdings.

3. Please describe securities lending and BlackRock's process to lend securities. How is the collateral invested? From a return perspective has securities lending benefited the portfolio?

Securities lending is a well-established practice wherein a fund or account makes short-term loans of stocks or bonds with the intention of incrementally increasing returns. First, a large financial institution asks to temporarily borrow a stock or bond. In order to borrow the stock or bond, the borrower must pay a fee and provide collateral to the fund or account. The fund or account keeps the collateral to secure repayment in case the borrower fails to return the loaned stock or bond. The value of the collateral must exceed the value of the loaned stock or bond, which provides the fund or account with a "safety cushion" to prevent loss if the borrower doesn't return the security.

BlackRock's Lending Program

BlackRock, and its predecessor entities, has provided securities lending and cash management services to clients for over 34 years. Both capabilities are core competencies at BlackRock and an integral part of BlackRock's investment management offering. Our securities lending program is designed to help clients realize the full potential of their assets while assuming well-managed and understood risks. Collateral standards: Cash is the most common form of collateral. We require borrowers to post excess collateral of at least 102% of the loan value and retain the borrower's collateral until the borrower has returned the loaned stock or bond. For our U.S. domiciled collective funds, we invest cash collateral conservatively in BlackRock Short-Term Investment (STIF) Funds. These STIF funds are subject to OCC rules that include limitations on a portfolio's WAM and WAL. BlackRock also subjects these STIF funds to additional credit quality and liquidity requirements. Please find attached a copy of the STIF guidelines. The cash collateral reinvestment fund for both the Russell 1000 Value and US Debt Index funds is Cash Equivalent Fund II, the below table was highlighted.

Lending Fund Performance

Reporting Period: January 01 2011 To July 31 2016

Russell 1000 Value Fund

Year	Fund Name	Fund Yield (ann bps)
2011	Russell 1000 Value	3.91
2012	Russell 1000 Value	3.49
2013	Russell 1000 Value	2.31
2014	Russell 1000 Value	2.41
2015	Russell 1000 Value	2.80
2016 YTD	Russell 1000 Value	2.95

US Debt Index Fund

Year	Fund Name	Fund Yield (ann bps)
2011	US Debt Index Fund	5.40
2012	US Debt Index Fund	5.90
2013	US Debt Index Fund	6.78
2014	US Debt Index Fund	5.88
2015	US Debt Index Fund	5.44
2016 YTD	US Debt Index Fund	5.18

John O'Hare asked if there were losses in the future would BlackRock guarantee the Board's collateral.

Ms. Tao answered there was no formal guarantee and there was an investment risk involved. Generally the risk was of counter party defaults and Blackrock mitigates this risk through an extensive evaluation process for counter parties.

Mr. O'Hare clarified there was no formal guarantee on the Board's collateral.

Ms. Tao answered in the affirmative.

Laura Wallace elaborated the program is very conservative and securities lending was a very small part of the business. Senior management would not allow the securities lending to compromise the asset management business.

Mr. Erlendson said the money market rules would be changing in October 2016 to have floating values, and asked how that would impact securities lending given that rates are so low to begin with.

Ms. Tao explained the company was able to negotiate attractive rebate rates with the counter parties. For all funds the underlying vehicle used will maintain the one dollar rate.

Mr. Erlendson clarified they would be using a treasury fund.

Ms. Tao answered in the affirmative.

Gordon Weightman stated the bottom line was that there is some risk in securities lending, so the prudent course of action would be to evaluate the portfolio securities BlackRock is actually investing in and make sure they are high quality and short duration. He asked if over time securities lending has offset the active management fee.

Ms. Tao answered yes.

4. Annually, Russell reconstituted their indices, which may result in securities being added or removed from a particular index. For the Russell 1000 Value index fund, please address how BlackRock buys and sells stocks around the reconstitution date. Do you focus on minimizing tracking error, or do you use the rebalancing event as an opportunity to marginally enhance the index funds' pre-fee return?

BlackRock is an industry leader when it comes to managing index reconstitutions. BlackRock has extensive experience understanding how an index is constructed and, more importantly, managing institutional assets against those benchmarks. When trading index changes for our portfolios we have a number of objectives including:

- remaining within risk tolerance levels;
- minimizing pricing distortions around the index change point; and
- adding value to portfolios.

These objectives are potentially conflicting. For instance, selling index deletions early might maximize the potential for adding value, but unexpected relative price movements could lead to an unacceptable level of risk and potentially underperformance. The Beta Strategies team handles more than 200,000 corporate events and index changes each year, and we view every one as an opportunity to preserve value for the portfolios in a risk-controlled fashion.

MITIGATING THE IMPACT

BlackRock views every index change and rebalance as an opportunity to preserve value for our clients. Our portfolio managers leverage their skill, ingenuity and capital markets expertise to evaluate hundreds of investment decisions each day to deliver unmatched performance, precision and reliability.

Our research into major index rebalances involving additions and deletions to the benchmark begins sometime ahead of the announcement by the index provider. BlackRock looks to identify the stocks most likely to enter/exit the index as part of the review. This enables us to search for potential trading issues as early as possible and carefully monitor the liquidity and price movements of the stocks. When trading major index changes, our portfolio managers and research teams leverage their detailed understanding of benchmark methodology in the context of each impacted portfolio:

- Ensure portfolios are fully invested in light of client flows or dividend payments
- Construct each trade to explicitly trade off risk and cost
- Carefully evaluate corporate actions to help minimize risk and preserve value
- Develop creative trading strategies for less liquid positions
- Partner with index providers regarding benchmark changes

These benchmark-driven factors are then incorporated with the aggregate views, activities and sentiment of other investors, including:

- Net flows of BlackRock and other indexers
- Expected activity of profit-motivated investors
- Local market conventions and behaviors
- Macro economic events (such as a Fed announcement, or jobs report)
- Company earnings releases
- Market sentiment that could affect rebalancing

Bringing together their macro view of the world with the micro details of the rebalance at hand, we determine the most effective trading strategy. Our approach may include:

- Trading away from the close on effective date, in advance of or after effective date
- Utilizing Limit on Close orders to provide additional downside risk protection
- Real time monitoring of the Value at Risk of any trading strategy
- Negotiating principal deals with counterparties guaranteed credit above market on close price, minimizing risk while providing value added to the portfolios
- Maximizing internal crossing opportunities across our suite of portfolios

Because turnover levels are generally higher for alternatively weighted portfolios such as the Russell Fundamental US All Cap Index strategy, periodic index rebalances can trigger potentially large trades. Understanding the aggregate supply and demand for individual securities and the potential for market impact is particularly important in these circumstances. BlackRock's Index Equity team has dedicated research teams focused upon understanding each benchmark's methodology and the characteristics of a rebalance trade.

5. What team(s) manage these portfolio at BlackRock and have there been notable departures or hires recently?

There have been no key investment portfolio departures for either funds.

Ms. Tao discussed the fund transition they performed for TSRS in May 2016. The board transitioned approximately $105M across 11 different strategies. The key goal of the transition was to manage 4 dimensions of risk: exposure, execution, process, and operation. The process went smoothly and the trade occurred on a good day with the highest single gain of the year for the fund. In total the transition costs were around 21 basis points which was well within the pre-trade estimate range.

Mr. Weightman stated it was a very well-run process and was on time and on budget.

Mr. Erlendson reminded the Board that this process was scheduled to occur at a much earlier date but with personnel changes the City decided to wait. He commended Neil Galassi for stepping into the Pension Administrator role at such a complicated time.

Ms. Wallace discussed the U.S. Debt fixed income strategy. Performance has been in line with expectations. The difference between replicating fixed income as opposed to equity is that in equity a manager can just buy every security in the index. In a fixed income index, with almost 10,000 securities, many of which do not trade every day or month because they are locked up by pension plans who have owned the bonds for 20 years and have no intention of selling them, replicating the index is not feasible. Another issue is the index does not incur any transaction costs, and the transaction cost in fixed income is the difference between when the bond is purchased and where it is marked at the end of the day. The index marks the bonds at the bid side, which is where you expect to sell but they have to be bought at ask, so every bond purchased is immediately marked down to the bid, resulting in a transaction cost of the difference. The BlackRock team is hyper focused on transaction costs because every basis point paid in transaction costs is a basis point of tracking error. They do participate in the new issue market and securities lending. Their sampling process does incur some tracking error but so far it has been positive. Fixed income markets have also been very strong in 2016 as the primary risk factor is interest rates which have been very low. BlackRock's global fixed income platform included $1.6 Trillion equally split between active and passive strategies. Last quarter their passive business exceeded their active business as a result of enormous client interest and flows into the passive side.

Michael Coffey stated he would like to know more about the model based team.

Ms. Wallace answered the model based team is model based and passive, so the portfolio managers manage all of the passive portfolios including index and ETF, as well s $65B. The process grew out of their passive business about 15 years ago. They are very low risk and benchmark aware, as opposed to the fundamental business which utilizes more traditional fundamental managers who have higher risk and alpha targets. The model based team falls in the middle between passive and fully fundamental active management and runs less tracking error, provides benchmark returns, and provides downside protection. There are few firms providing quantitative fixed income investing, it is more popular in the equity space where model outputs can translate into trades and is fairly frictionless. The difference in fixed income is that model outputs and back tests can provide results and a trade list the manager cannot trade because the bonds do not trade. There are higher barriers to entry in model based and quantitative investing in fixed income, but it has been a very successful business for BlackRock.

Mr. Coffey asked if it was a riskier strategy.

Ms. Wallace answered they run lower risk compared to fundamental, but there is a $6B hedge fund in the model based side that is sold out.

Mr. O'Hare said if interest rates go up the fixed income portfolio is going underperform.

Ms. Wallace answered in the model based business they do not take active duration risk against the benchmark, so they do seek out the characteristics of the benchmark with the key risk duration lockdown. They have also developed the strategies because many clients are concerned about interest rate movement. They have also developed a benchmark called fixed income balanced risk for clients who do not like the Barclay's Aggregate because of the duration and do not want to hire an active manager. They created a benchmark, worked with Barclay's, and even publish the benchmark. It looks to balance interest rate risk with spread risk.

Mr. Weightman advised the tough thing in this environment is that there is not a lot of yield offset should there be a price decline. Many investors struggle with the fact that bonds are very expensive and the yield offset will not keep them from going negative and many, independent of their view on risk, have been searching for yield because of the low risk environment.

Ms. Wallace concluded by saying their track record proves they have delivered what they promised in the replication of the benchmark, their trading platform is the largest on Wall Street; they traded $1 Trillion in fixed income last year. The largest factor is transaction costs and they have been able to deliver extremely low transaction costs to their clients over time. Their $800B passive platform allows for large seasoned pools of bonds.

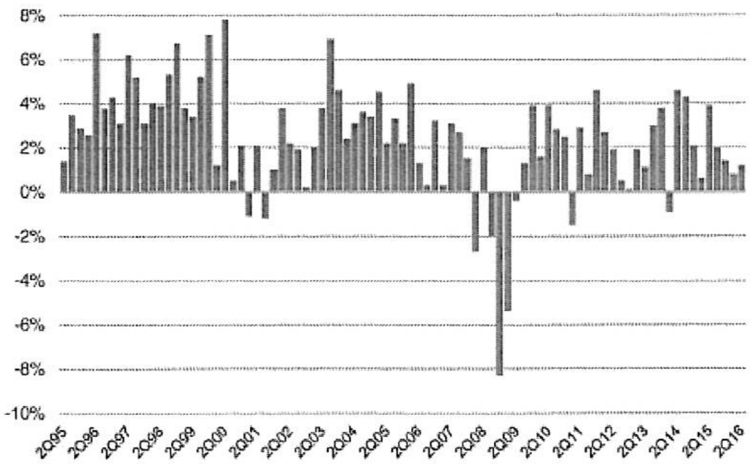
2. June 30, 2016 TSRS Quarterly Review of Investment Performance – Callan Associates, Inc.

Paul Erlendsen explained the chart below illustrating growth in the economy minus the rate of inflation.

U.S. Economy

Periods Ending June 30, 2016

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

The economy continues to grow but at lower than the long-term historical rates. The following chart measures inflation on a year over year basis.

Inflation Year-Over-Year

Source: Bureau of Labor Statistics

The green line represents core inflation which includes the goods and services people buy. The orange line represents a commodity index. Emerging economies tend to be more commodity based which is one of the reasons for the higher volatility in emerging markets. There is not a lot of optimism regarding interest rates because rates are so low, if they go up bonds held today get written down in value, if the rates stay the same rates of return are very low, and if rates go even lower it means future investments will have even lower returns. It is anticipated that future interest rates in Japan and the Eurozone would fall below zero.

Michael Coffey asked what a below zero interest rate meant.

Mr. Erlendsen explained it meant that instead of lenders earning interest they would have to give more money to the lender or write down the value of the borrowed amount. Essentially it states economic prospects are so bad that the central banks would rather lose a little money than put the capital at risk and possibly lose more. There are reasons for governments to do this, for example it lowers borrowers cost of debt resulting in more disposable income. Another reason would be to lower the value of a countries currency to increase exporting goods and attract tourism. While there are good reasons to implement negative interest rates it is not sustainable.

Gordon Weightman stated it had also made it difficult for active equity managers to outperform, especially in small and mid-cap stocks.

Mr. Erlendson said when viewing bond issuance, both high yield debt and investment grade debt, over the last 4 years, every year has been a new high in terms of companies issuing more debt and coincident with that the term of the debt increased. As of December 31, 2015 the average tenure of new issued bonds was in the mid-teens. This shows that corporate treasurers think that debt is as cheap as it will ever be. In June 2014 there were not any governments with negative interest rates and now 36% of all outstanding government debt has negative interest rates.

Mr. Coffey asked if there were any comparable occurrences in history.

Mr. Erlendson answered there may have been points where a company or a government issued a security with a negative interest rate, but nothing like this has ever happened before.

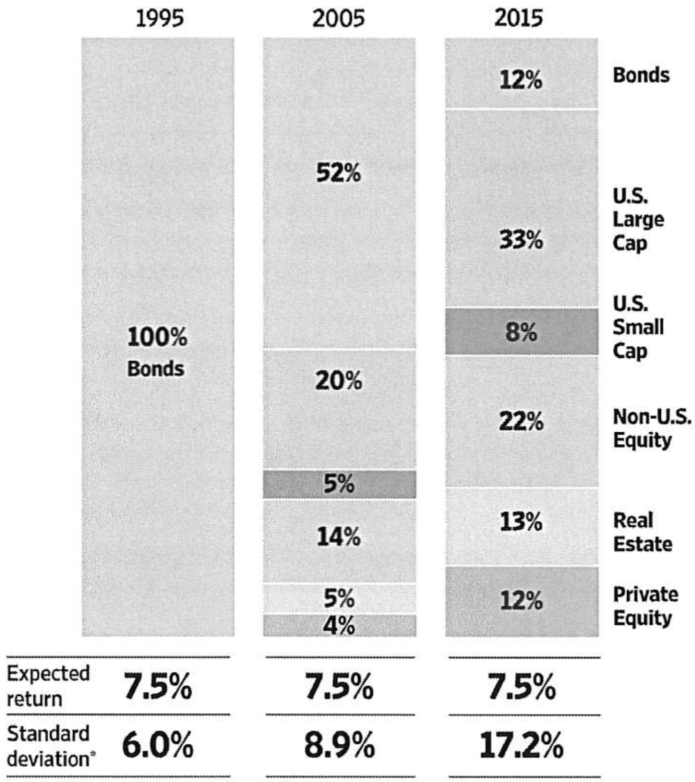
Mr. O'Hare asked how all of this would affect the future.

Mr. Erlendson said it punishes savers and encourages risk taking. The chart below illustrates the differences in the market over a 20 year period.

Rolling the Dice

Investors grappling with lower interest rates have to take bigger risks if they want to equal returns of two decades ago.

Estimates of what investors needed to earn 7.5%



*Likely amount by which returns could vary
Source: Callan Associates

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Mr. O'Hare asked if they were saying it would be hard to reach a 7.5% return and the Board should be more realistic about the expected return.

Mr. Erlendsen answered in the affirmative and advised 6.7% would be a more realistic expectation.

Mr. Weightman discussed the Boards returns over one and five years as shown in the following tables.

One Year Relative Attribution Effects

Style Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Style Allocation	Total Relative Return
Large Cap Equity	37%	34%	1.60%	3.99%	(0.80%)	0.06%	(0.73%)
Small/Mid Cap Equity	11%	10%	0.17%	(3.67%)	0.47%	(0.09%)	0.38%
Fixed Income	24%	26%	6.39%	6.00%	0.08%	(0.19%)	(0.11%)
Real Estate	9%	8%	10.80%	11.82%	(0.08%)	(0.01%)	(0.09%)
Infrastructure	6%	5%	12.61%	4.65%	0.48%	(0.02%)	0.46%
International Equity	14%	17%	(9.40%)	(10.30%)	0.31%	0.30%	0.61%
Total			2.33% =	1.82% +	0.46% +	0.06%	0.51%

Five Year Annualized Relative Attribution Effects

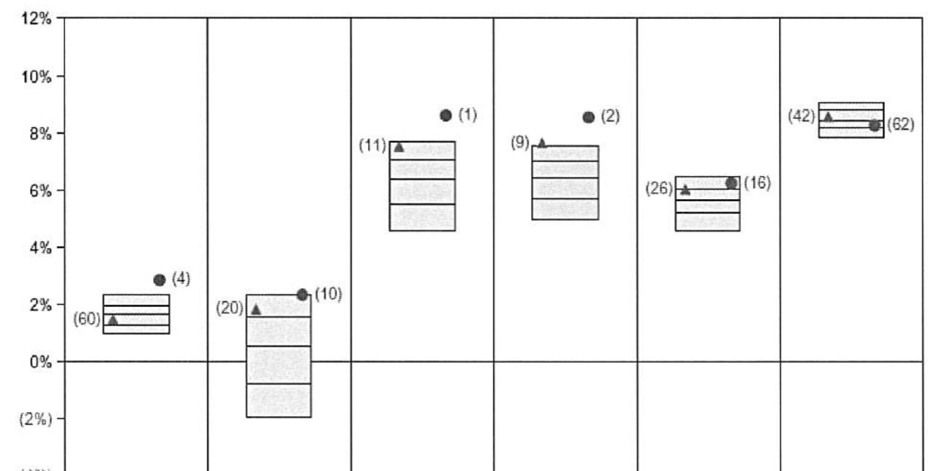
Style Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Style Allocation	Total Relative Return
Large Cap Equity	37%	36%	12.05%	12.10%	0.01%	0.05%	0.05%
Small/Mid Cap Equity	11%	10%	12.39%	9.48%	0.31%	(0.01%)	0.30%
Fixed Income	24%	26%	4.95%	3.81%	0.28%	0.02%	0.31%
Real Estate	8%	8%	13.11%	12.72%	0.03%	(0.05%)	(0.03%)
Infrastructure	6%	5%	6.81%	5.13%	0.11%	(0.06%)	0.05%
International Equity	14%	15%	0.73%	0.09%	0.13%	0.08%	0.21%
Total			**8.54% =**	**7.64% +**	**0.87% +**	**0.03%**	**0.90%**

Mr. Erlendson recommended considering which managers cause the negative Manager Effect in the different asset classes. The majority of the negative 80 basis points in Large Cap Equity is a result of the performance of the T-Rowe Price growth fund.

Mr. O'Hare asked what the average management fee for the portfolio is so that they could subtract that number from the manager effect.

Mr. Weightman answered it was roughly 40 basis points. The following table shows how TSRS has performed against the benchmark and other public funds.

Performance vs CAI Public Fund Sponsor Database (Gross)



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 27-3/4 Years
10th Percentile	2.31	2.31	7.70	7.53	6.46	9.08
25th Percentile	1.93	1.56	7.06	7.02	6.03	8.83
Median	1.62	0.54	6.39	6.42	5.65	8.41
75th Percentile	1.24	(0.81)	5.51	5.70	5.19	8.17
90th Percentile	0.98	(1.97)	4.57	4.94	4.55	7.83
Total Fund ●	2.84	2.33	8.61	8.54	6.23	8.26
Total Fund Benchmark ▲	1.46	1.82	7.51	7.64	6.02	8.56

Mr. O'Hare asked how many public funds were included in the CAI Public Fund Sponsor Database.

Mr. Weightman answered over 200.

Mr. Erlendson clarified that they were not all Callan clients and that they were included regardless of size. If the Board was interested they could look at a comparison with funds of a similar size between \$500M and \$1B.

Mr. Coffey expressed interest in seeing a comparison with public funds of a similar size.

Mr. O'Hare asked if the information in the tables above mean the fund is performing very well over time.

Mr. Weightman stated it was a reflection of the Board's diligence with the asset allocation policy, and the Board's due diligence with investment managers and the evaluation of them over time. This is reflected when viewing the returns of the individual investment managers as shown in the following table.

Returns for Periods Ended June 30, 2016

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Net of Fees					
Domestic Equity	**2.78%**	**0.94%**	**11.49%**	**11.79%**	**6.79%**
Total Domestic Equity Target (1)	2.70%	2.28%	11.02%	11.56%	7.44%
Large Cap Equity	**2.33%**	**1.44%**	**11.56%**	**11.86%**	**6.43%**
S&P 500 Index	2.46%	3.99%	11.66%	12.10%	7.42%
Alliance S&P Index	2.36%	3.93%	11.58%	12.02%	7.42%
PIMCO StocksPLUS	2.94%	2.68%	12.12%	13.00%	9.19%
S&P 500 Index	2.46%	3.99%	11.66%	12.10%	7.42%
BlackRock Russell 1000 Value Index	4.33%	2.71%	9.88%	11.38%	6.25%
Russell 1000 Value Index	4.58%	2.86%	9.87%	11.35%	6.13%
T. Rowe Price Large Cap Growth	0.01%	(3.13%)	12.74%	12.43%	9.12%
Russell 1000 Growth Index	0.61%	3.02%	13.07%	12.35%	8.78%
Small/Mid Cap Equity U.S. Equity	**4.49%**	**(0.61%)**	**11.27%**	**11.51%**	**8.15%**
Russell 2500 Index	3.57%	(3.67%)	8.61%	9.48%	7.32%
Champlain Mid Cap	6.05%	3.76%	12.40%	11.57%	10.45%
Russell MidCap Index	3.18%	0.56%	10.80%	10.90%	8.07%
Pyramis Small Cap	2.83%	(5.10%)	9.98%	11.30%	8.71%
Russell 2000 Index	3.79%	(6.73%)	7.09%	8.35%	6.20%
International Equity	**1.66%**	**(10.04%)**	**0.44%**	**0.00%**	**1.20%**
MSCI ACWI x US (Net)	(0.64%)	(10.24%)	1.16%	0.10%	1.87%
Causeway International Opportunities (3)	(0.78%)	(12.24%)	1.54%	2.37%	2.87%
Causeway Linked Index (3)	(0.64%)	(9.42%)	2.35%	1.85%	1.66%
Aberdeen EAFE Plus	3.56%	(8.32%)	(1.42%)	0.16%	3.10%
MSCI ACWI x US (Net)	(0.64%)	(10.24%)	1.16%	0.10%	1.87%
Fixed Income	**3.68%**	**6.06%**	**4.56%**	**4.62%**	**5.77%**
Barclays Aggregate Index	2.21%	6.00%	4.06%	3.76%	5.13%
BlackRock U.S. Debt Fund	2.24%	6.09%	4.15%	3.87%	5.25%
Barclays Aggregate Index	2.21%	6.00%	4.06%	3.76%	5.13%
PIMCO Fixed Income	4.57%	6.04%	4.82%	5.25%	6.28%
Custom Index (2)	3.56%	7.28%	5.45%	5.27%	6.35%

Mr. Erlendsen advised the Board to not become concerned over quarter, year to date, and one year numbers because managers need to add value above the benchmark. This means they have to look be different from the benchmark and there will be times where the positions taken are not compensated. The more managers are told to outperform the benchmark the less they are going to take value adding positions.

Mr. Weightman clarified that over shorter terms underperformance will tend to result from their management style.

Neil Galassi stated PIMCO does not charge management fees unless they outperform the benchmark and over the last year they have not done so.

Mr. Weightman stated the JP Morgan Income and Growth Funds have a management fee of 1.25% and are reducing it, effective October 1, 2016, to 1.05% so the Board will save 20 basis points.

Silvia Amparano asked whether they had been asked by staff or consultants to lower the fee or they were lowering it across the board.

Mr. Weightman answered it was across the board. American Century has a 2 month return of 5.7% vs. the benchmark return of 1.8%.

Mr. O'Hare asked about the assumptions made for the 10 year projected outcome.

Mr. Erlendson answered they used the capital market assumptions from the asset allocation study. The point of the projection is to advise the Board that it is unlikely that the 7.25% expected return will be met.

Ms. Amparano asked why the projected only 10 years as opposed to 20 or 30 years.

Mr. Erlendsen answered that the range of outcomes become narrower over longer periods of time, and in their experience no Board makes a decision and lets it sit for 20 years. A 20 year projection could create more dilemmas in decision making.

Ms. Amparano asked if the projected return increases or decreases for a 20 or 30 year projection.

Mr. Weightman answered it increases longer term, they present their projections are 10 years but they consider 30 years which bring the model closer to long-term averages.

Ms. Amparano stated that she thought they would set their expected return based on more than a 10 year horizon because that is how pension functions.

Mr. Erlendsen agreed and said that they were only arguing because returns fluctuate, and for the next 10 years it will be difficult.

Mr. Weightman stated that what Ms. Amparano has described is the reason many public pension plans have not lowered their expected rate of return, but recent experience shows that the short term matters more. In setting a lower expected rate of return the Board is sending a message to City Hall and Mayor and Council that they do not expect the fund to do as well over the next 10 years as it has previously. All of the numbers in the projection assumes passive management.

3. Would It Be Better to Index the Whole Fund & Manager Evaluation Discussion

Chairman Fleming stated that based on the information given when discussing item C2 they could safely say that the Board's active managers have added value to the fund, when considering consultant and administrative costs some fees that could be avoided with indexing. He asked what ballpark number should the Board deduct from the 50 basis points.

Mr. Erlendsen stated they could not answer that without further research but his guess would be +/- 10 basis points, not enough to swing the argument. He proposed the question should be whether or not the Board should have the existing fixed income asset allocation and Callan would present arguments for both sides.

Mr. O'Hare asked if the Board should be anticipating some losses in fixed income because of their asset allocation.

Mr. Erlendson answered if interest rates do not change at all, one third of the portfolio is in treasuries, which are the lowest yielding instrument available, why not put some of those funds into high grade credit which will raise the return. In an index fund, whoever issues the most debt is who the Board would have the most exposure to in whatever instruments they bring forward, floating rate or fixed rate. Given that environment there is a case to be made for looking into an active manager.

Chairman Fleming asked if an active manager could be expected to be better at avoiding the risk of interest rates increasing.

Mr. Weightman answered that depended on the manager. It would make sense to evaluate the entire fixed income structure to see how the fund is currently positioned and consider alternatives to determine whether active management makes sense across the entire fixed income structure or whether it makes more sense to keep the passive portion.

Chairman Fleming requested a future agenda item to consider this.

Mr. Coffey asked what Callan's analysis would take into account

Mr. Erlendson answered they would consider the likely risks and opportunities moving forward. Are interest rates going to increase and if they do how would various strategies perform, etc. The discussion would determine the Board's risk aversion.

D. **Plan Administrator's Report**

4. Report on Office Operations and Key Facts and Figures From the Past Month

Neil Galassi gave a report that over the month of June the office processed 6 retirements. Of that amount 5 were normal retirements and 1 was deferred. There were a total of 2,875 pension payments across all categories during the month. Mr. Galassi continued to state that out of the 2,875 retirement payments processed, there were 2,853 direct deposit, 22 live checks and 21 refunds/rollovers totaling approximately $237,000. Mr. Galassi stated that he and the Management Analyst, Dawn Davis, have been working on the investment reporting and reconciliation process over the past month. They have been compiling information for the Accounting Operations Division so that they can compile fiscal year end reporting for the system. It has been a steep learning curve with a lot of detail to go through as far as picking up what has been done in the past; replicating it and also ensuring that its being done correctly, or if it should be done differently or better. With that, Mr. Galassi stated that it has taken longer than anticipated; however, he feels they will meet all the necessary deadlines. He noted that Dawn has served as a very good second set of eyes, being that the schedules have to tie to one another which helped ensure accuracy. Mr. Galassi went on to notify the Board that the Retirement Office have been in discussions with Payroll and Benefits on how to better communicate the timing of payment to members, such as separation payments, last paycheck and first retirement checks. Part of the communication will be revisions to the checklist provided by the Retirement Office to employees when they retire. The checklist will indicate the timing of everything, so that the employee is aware upfront. He hopes to present the revised checklist to the Board at a future Operational Highlight Report, as soon as it is completed. Mr. Galassi announced that Administrative Assistant, Dmitriy Adamia took a job opportunity with the General Services Department, and recruitment was in process to fill the vacancy as soon as possible. Interviews were scheduled for September 1st. In the meantime, Finance staff has been assisting retirement staff with answering phones, member walk-ins, and front desk coverage.

Mr. Coffey stated that it was decided some time ago to suspend payments to people who hadn't responded to the disability audit. He proceeded to ask for the end result of this decision.

Mr. Galassi informed the Board that one person had contacted the office and provided the necessary information to have their benefit restored, which was done for that individual. We haven't heard from the other 3 retirees. Mr. Galassi reminded The Board that it is the retirees' responsibility to contact Staff to provide the necessary information. The benefits of those who have not provided the information have been turned off and they are not currently receiving their benefit.
Chairman Fleming asked how long it has been since the notification went out.

Mr. Galassi stated that he believed it has been since the last meeting. He will continue to keep on that list and concluded by asking the Board if they had any further questions regarding this topic, which none were heard.

Mr. Galassi stated he would keep the highlights for the month of July brief since Callan just gave an update. The portfolio continued to see gains in the month of July and that has continued into the month of August. The predominate driver was a "risk-on" market environment where securities in the technology and healthcare sectors saw increased performance, while the telecomm and utility sectors, which perform better during risk-off periods saw declines. This is evident when looking at the U.S. Large Cap Equity managers. You will notice the T-Rowe Price Large Cap Growth Fund strongly rebounded over the past 2 months due to their strategy favoring a risk-on environment while the Alliance S&P 500 strategy underperformed favoring a risk-off environment. Mr. Galassi stated that he was contacted by Champlain, and they announced changes to the team over the Small-Mid Cap strategy we are invested in. The tenured manager over the healthcare sector portion, Davis O'Neal is retiring at the end of calendar year 2016. They have announced the hiring of Robert Hasley who will join with a current senior analyst on the team, Erik Giard-Chase to work closely with David to transition his duties prior to retirement. He was also in contact with Macquarie, one of our Infrastructure Managers. Ed Beckley who was the head of the European team that oversees our infrastructure investments has left Macquarie. Martin Stanly, who used to be the head of that team, will re-assume the role leading to a seamless transition.

5. TSRS Operation Highlight – The Actuarial Data Process

Mr. Galassi informed the Board that Procedures over validity of member data for the actuarial valuation was accomplished during the past month. No significant items came to light. We were able to mitigate all questions from the Actuary which allowed them to move forward with the compilation of the actuarial valuation. Mr. Galassi described the following items highlighted by the actuary for verification for preparation of the annual actuarial valuation:

- Verification of active member compensation increases
- Verification of abnormal service increases from the prior years. These primarily involved the rolling in of sick and vacation leave balances into service for Tier I members as provided in Code.
- Ensuring the separated members with more than 5 years of service are correctly recorded as Terminated and Vested. We had 22 records that needed to be updated for this.
- There were 8 records that had inconsistencies in the benefit amount when compared to the prior year, those were all mitigated and predominately due to QDRO's on these individuals.
- We also had 3 records that existed in the prior year but not in this year, they were all related to deceased members.

E. **Administrative Discussions**

1. Approval of TSRS Board Meeting Minutes for June 30th, 2016

Chairman Fleming asked Neil Galassi if the Administrative Discussions, Item E1 could be taken out of sequence and if there was something that needed to be done.

Neil Galassi answered that the Board would need to revote on the item, being that there wasn't a voting quorum at the June 30, 2016 meeting. This was the result of the Chairman not voting and two of the board members arriving after the vote had taken place. A revote needed to be done to ensure there was a quorum on the vote.

Chairman Fleming then asked the Board if there were any additions, corrections or deletions to the June 30, 2016 meeting minutes. There were none heard, so Chairman Fleming proceeded to have the Board vote.

Chairman Fleming asked for a vote on the Approval of the TSRS Board Meeting Minutes for June 30th, 2016. Item was approved by a vote of 6-0 (Jorge Hernandez absent/excused).

2. Board Member Education Plan Discussion

This item was continued to the meeting scheduled on September 29, 2016.

F. **Articles for Board Member Education / Discussion**
   1. Barron's-BlackRock's Fredericks Balances Risk and Income
   2. Causeway-The Price of Popularity

G. **Call to Audience –** none heard.

H. **Future Agenda Items**
   1. Duties and Selection of Advisory Board
   2. TSRS Board Annual Evaluation of Staff and Consultants
   3. RFQ for Actuarial Services
   4. Action Plan for Black Swan Events
   5. Champlain Investment Partners – Annual Manager Review

I. **Adjournment** – 10:56 AM

Approved:

Robert Fleming Chairman of the Board	9/29/16 Date	Neil S. Galassi Pension Administrator	9/29/16 Date