NDTFFR Board Meeting Agenda

Thursday, January 25, 2018
1:00 pm
ND RIO Conference Room
3442 East Century Avenue
Bismarck, ND

*** **TOUR OF RIO OFFICE SPACE** – Fay Kopp, 15 min.

1. **Call to Order and Approval of Agenda** - Pres. Gessner (Board Action)

2. **Approval of Minutes of October 26, 2017 Meeting** - Pres. Gessner (Board Action) 5 min.

3. **Board Education**: Environmental, Social and Governance Investing – Dave Hunter (Information) 20 min.

4. **Quarterly Investment Update** – Dave Hunter (Board Action) 10 min.

5. **RIO Agency Update** – Dave Hunter (Information) 5 min.

6. **2018 Tax Withholding Update** – Fay Kopp, Shelly Schumacher (Information) 10 min.

7. **TFFR Member Online Update** – Fay Kopp, Shelly Schumacher (Information) 10 min.

8. **2017 GASB 67 & 68 Report** – Shelly Schumacher (Board Action) 10 min.

9. **Board Policy C-7:** Employer Payment Plan Models, 2nd Reading – Fay Kopp (Board Action) 5 min.

BREAK

10. **2019 Legislative Planning** – Fay Kopp (Information) 60 min.

11. **Annual TFFR Ends-Statistics Report** – Shelly Schumacher (Board Action) 30 min.

12. **Quarterly Audit Services Update** – Sara Sauter (Information) 10 min.

13. **2017 CAFR and PPCC Awards** – Fay Kopp (Information) 5 min.

14. **Other Business**

15. **Adjournment**

Next Board Meeting: March 22 , 2018

Any person who requires an auxiliary aid or service should contact the Retirement and Investment Office at 701-328-9885 at least three (3) days before the scheduled meeting.

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
OCTOBER 26, 2017, BOARD MEETING

BOARD MEMBERS PRESENT:	Mike Gessner, President Rob Lech, Vice President Kirsten Baesler, State Superintendent Mike Burton, Trustee Toni Gumeringer, Trustee Mel Olson, Trustee Kelly Schmidt, State Treasurer
STAFF PRESENT:	Terra Miller Bowley, Audit Services Supvr Paula Brown, Employee Benefit Programs Spec Connie Flanagan, Fiscal & Invt Ops Mgr Bonnie Heit, Admin Svs Supvr David Hunter, ED/CIO Fay Kopp, Deputy ED/CRO Denise Osmond, Employee Benefit Programs Spec Shelly Schumacher, Retirement Program Mgr
OTHERS PRESENT:	Kathy Kindschi, NDU-Retired Janilyn Murtha, Attorney General's Office

CALL TO ORDER:

Mr. Mike Gessner, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the meeting to order at 1:00 p.m. on Thursday, October 26, 2017, in the Peace Garden Room, State Capitol, Bismarck, ND.

THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM: MR. BURTON, MR. GESSNER, MRS. GUMERINGER, MR. LECH, MR.OLSON, AND SUPT. BAESLER

ACCEPTANCE OF AGENDA:

The Board considered the agenda for the October 26, 2017 meeting.

IT WAS MOVED BY MR. LECH AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE AGENDA AS DISTRIBUTED.

AYES: SUPT. BAESLER, MR. BURTON, MR. LECH, MRS. GUMERINGER, MR. OLSON, AND PRESIDENT GESSNER
NAYS: NONE
MOTION CARRIED.
ABSENT: TREASURER SCHMIDT

MINUTES:

The Board considered the minutes of the September 21, 2017, meeting.

IT WAS MOVED BY MR. OLSON AND SECONDED BY MRS. GUMERINGER AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE SEPTEMBER 21, 2017, MINUTES AS DISTRIBUTED.

AYES: MR. LECH, MR. OLSON, MR. BURTON, SUPT. BAESLER, MRS. GUMERINGER, AND PRESIDENT GESSNER
NAYS: NONE
MOTION CARRIED.
ABSENT: TREASURER SCHMIDT

ACTUARY REPORT:

Ms. Kim Nicholl and Mr. Matt Strom, Segal Consulting, presented the Actuarial Valuation as of July 1, 2017. Highlights included the following:

- Market value of assets returned 12.6% for year ending 6/30/17 (Segal calculation). Gradual recognition of deferred losses resulted in 8.2% return of assets on actuarial value.
- Funded ratio increased from 62.1% (as of 7/1/16) to 63.7% (as of 7/1/17).
- Effective amortization period decreased from 29 years to 27 years.
- Actuarially determined contribution (ADC) decreased from 13.22% of payroll to 12.99% of payroll. Based on the employer contribution rate of 12.75%, the contribution deficiency decreased from 0.47% of payroll to 0.24% of payroll.
- GASB Net Pension Liability decreased from $1.47 billion as of 6/30/16, to $1.37 billion as of 6/30/17.

After board discussion of the 2017 valuation report and funding projections,

IT WAS MOVED BY SUPT. BAESLER AND SECONDED BY MR. BURTON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT SEGAL'S ACTUARIAL VALUATION AS OF JULY 1, 2017.

AYES: TREASURER SCHMIDT, SUPT. BAESLER, MRS. GUMERINGER, MR. OLSON, MR. BURTON, MR. LECH, AND PRESIDENT GESSNER.
NAYS: NONE
MOTION CARRIED

BOARD EDUCATION:

Ms. Nicholl and Mr. Strom provided information relating to potential new actuarial standards, which could futuristically affect the TFFR plan as well as other governmental pension plans. They also discussed current deterministic funding projections being provided to TFFR, as well as the possibility of conducting stochastic projections to further assess the long-term health of the TFFR plan at the Board's request.

LEGISLATION:

The Legislative Employee Benefits Programs Committee (EBPC) met on Thursday, October 26, 2017. Staff provided the Committee with an overview of RIO, SIB, and TFFR. Ms. Nicholl and Mr. Strom reviewed the TFFR Actuarial Valuation as of July 1, 2017.

Staff reviewed with the board questions and discussions that took place from the meeting.

AGENCY UPDATE:

Mr. Hunter provided a staffing update on RIO. The Supervisor of Audit Services and the Administrative Assistant II positions are scheduled to be posted in November.

Mr. Hunter and Mr. Gessner thanked Ms. Terra Miller Bowley for all of her contributions to RIO and wished her well in her new position. Mr. Gessner stated the Audit Program has come a long way due to the leadership of Ms. Miller Bowley.

The Board recessed at 2:28 p.m. and reconvened at 2:40 p.m.

RE-EMPLOYED RETIREE REPORT:

Mrs. Schumacher reviewed statistics for re-employed retirees of TFFR Participating Employers for 2016-17. Re-employed retirees totaled 347 out of a population of 8,501 or 4%. Re-employed retirees were employed in 140 or 65% of the 215 TFFR Participating Employers.

AUDIT SERVICES:

Ms. Miller Bowley highlighted activities of the Audit Services Division of RIO for the period of July 1, 2017 – September 30, 2017.

TRUSTEE EDUCATION:

Mr. Olson reported on the National Council on Teacher Retirement (NCTR) Annual Conference held October 7-10, 2017, in Tucson, AZ.

EMPLOYER PAYMENT PLAN MODELS:

At the Board's September 21, 2017, meeting, the Board directed staff to amend TFFR Board Policy C-7, Employer Payment Plan Models, to reflect elimination of Model 3 effective July 1, 2019. Mrs. Kopp reviewed the first reading of amended TFFR Board Policy C-7, Employer Payment Plan Models.

After discussion,

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE FIRST READING OF TFFR BOARD POLICY C-7, EMPLOYER PAYMENT PLAN MODELS, AS AMENDED.

AYES: MRS. GUMERINGER, MR. BURTON, MR. LECH, SUPT. BAESLER, MR. OLSON, TREASURER SCHMIDT, AND PRESIDENT GESSNER
NAYS: NONE
MOTION CARRIED

LEA PRESIDENT CONTRACT RELEASE TIME:

At the April and July 2017 meetings, the Board discussed salary payments made by TFFR employers to Local Education Association Presidents who are granted contract release time to perform their association duties. To give all board members an opportunity to participate in the discussion, the Board had taken no action. Ms. Murtha was prepared to comment on the legal risks, strengths, and weaknesses of actions and policy implications that may be taken by the Board regarding the issue. The Board would need to enter into Executive Session for attorney consultation or to discuss confidential member information.

After discussion,

IT WAS MOVED BY SUPT. BAESLER AND SECONDED BY MR. LECH AND CARRIED BY A ROLL CALL VOTE TO MOVE INTO EXECUTIVE SESSION PURSUANT TO NDCC 44-04-19.1, 44-04-19.2 AND 15-39.1-30 FOR ATTORNEY CONSULTATION AND TO DISCUSS CONFIDENTIAL MEMBER INFORMATION.

AYES: MR. OLSON, MR. LECH, SUPT. BAESLER, MRS. GUMERINGER, TREASURER SCHMIDT, MR. BURTON, AND PRESIDENT GESSNER
NAYS: NONE
MOTION CARRIED

The Board entered into Executive Session at 3:23 p.m. The Board, Ms. Murtha, and staff were present.

The Board exited Executive Session at 3:43 p.m.

After discussion,

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. BURTON AND CARRIED BY A ROLL CALL VOTE THAT SALARY PAYMENTS MADE BY TFFR EMPLOYERS TO LOCAL EDUCATIONAL ASSOCIATION PRESIDENTS, WHO ARE GRANTED CONTRACT RELEASE TIME TO PERFORM THEIR ASSOCIATION DUTIES, IS ELIGIBLE PENSIONABLE SALARY FOR TFFR PURPOSES.

AYES: MR. BURTON, MRS. GUMERINGER, MR. OLSON, SUPT. BAESLER, AND PRESIDENT GESSNER
NAYS: TREASURER SCHMIDT, MR. LECH
MOTION CARRIED

OTHER:

Ms. Murtha informed the board she has accepted a position with the City of Dickinson as their City Attorney.

The Board thanked Ms. Murtha for all of her guidance and assistance and wished her well.

ADJOURNMENT:

With no further business to come before the Board, President Gessner adjourned the meeting at 4:10 p.m.

Respectfully Submitted:

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Mr. Mike Gessner, President
Teachers' Fund for Retirement Board

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Bonnie Heit
Reporting Secretary

Informational Purposes Only

Board Education: ESG Investing

(Environmental, Social and Governance)

January 19, 2018

Overview: The SIB and RIO have a deep understanding of the importance of investment due diligence and consider Environmental, Social and Governance (ESG) factors to be one of the many factors that inform our investment decisions. As of December 31, 2017, RIO believes that approximately 85% of its investment managers (based on AUM) are signatories to the United Nations Principles for Responsible Investing (UNPRI) and over 95% of its strategic partners.

Dave Hunter, Executive Director / CIO

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

ND's State Investment Board Governance Manual Policy E-7.1: Proxy Voting

"The Board believes that good corporate investment decisions require good corporate governance, and that social responsibilities cannot be ignored in these decision processes."

"In keeping with the Board's philosophy, the managers are encouraged to vote *for* proposals that *increase* or enhance the following, and against those that decrease or diminish the same:

- Health of the population
- Environmental conditions
- Management and board accountability
- Abolition of management entrenchment
- Control of executive compensation
- Shareholder rights and ownership
- Fair labor practices"

REPORTING

Master Custodian

The master custodian shall report quarterly in writing on all pertinent proxy issues, including (1) receipt of proxy material; (2) nature of issues; (3) due date; (4) names of managers and dates forwarded; and (5) deficiency reports covering proxies that should have been received but were not.

Managers

Managers shall report quarterly in writing on how proxies have been voted, with explanations given whenever the Board's guidelines have not been followed.

Staff

Internal audit staff shall report annually on the efficiency of the process, the portion of total proxies that have actually been voted, and compliance with Board directives.

GUIDELINES

The Board believes that good corporate investment decisions require good corporate governance, and that social responsibilities cannot be ignored in these decision processes. Accordingly, the practice of faithfully voting with management will *not* be tolerated, nor will the "Wall Street Rule" which advocates the sale of shares if there is disagreement with management.

In keeping with the Board's philosophy, the managers are encouraged to vote *for* proposals that *increase* or enhance the following, and against those that decrease or diminish the same:

- Health of the population
- Environmental conditions
- Management and Board accountability
- Abolition of management entrenchment
- Control of executive compensation
- Shareholder rights and ownership
- Fair labor practices

Guidelines may be altered periodically by the Board as situations warrant.

Policy Implemented: September 20, 1995.
Amended: February 27, 2009

How do managers define Governance, Environmental & Social factors?

William Blair ESG Integration Philosophy Definitions

Governance Considerations

The William Blair analyst comments on governance profile, focusing on potential risks if applicable. Focus areas include shareholder value creation, transparency, oversight, and accounting policies. Does the company practice good governance? How are executives compensated, and is this aligned with shareholder interests and executive performance? Are there concerns about alignment of interests between management and outside shareholders (particularly when the company is closely held)? Is the board focused on shareholder interests and is it accountable? Is there an independent audit function and, if so, has it found significant issues? Does it report on these issues for shareholders? How conservative/aggressive are accounting practices?

Environmental Considerations

The William Blair analyst comments on relevant environmental issues/risks, if applicable. Focus areas include resource management, product innovation, renewable energy/water use, and reporting. Are these factors relevant? What are the company's environmental reporting/disclosure practices? Does it use resources effectively and minimize the impact of operations? Have there been any past environmental issues?

Social Considerations

The William Blair analyst comments on relevant environmental issues/risks, if applicable. Focus areas include human rights at the company and in the supply chain, labor/management relations, product/workplace safety, and community relations. What is the relationship between labor and management? Are there any other areas of concern, including the company's history and policy supporting human rights, workplace safety, product safety, community relations, resource use, or specific political risks?

William Blair

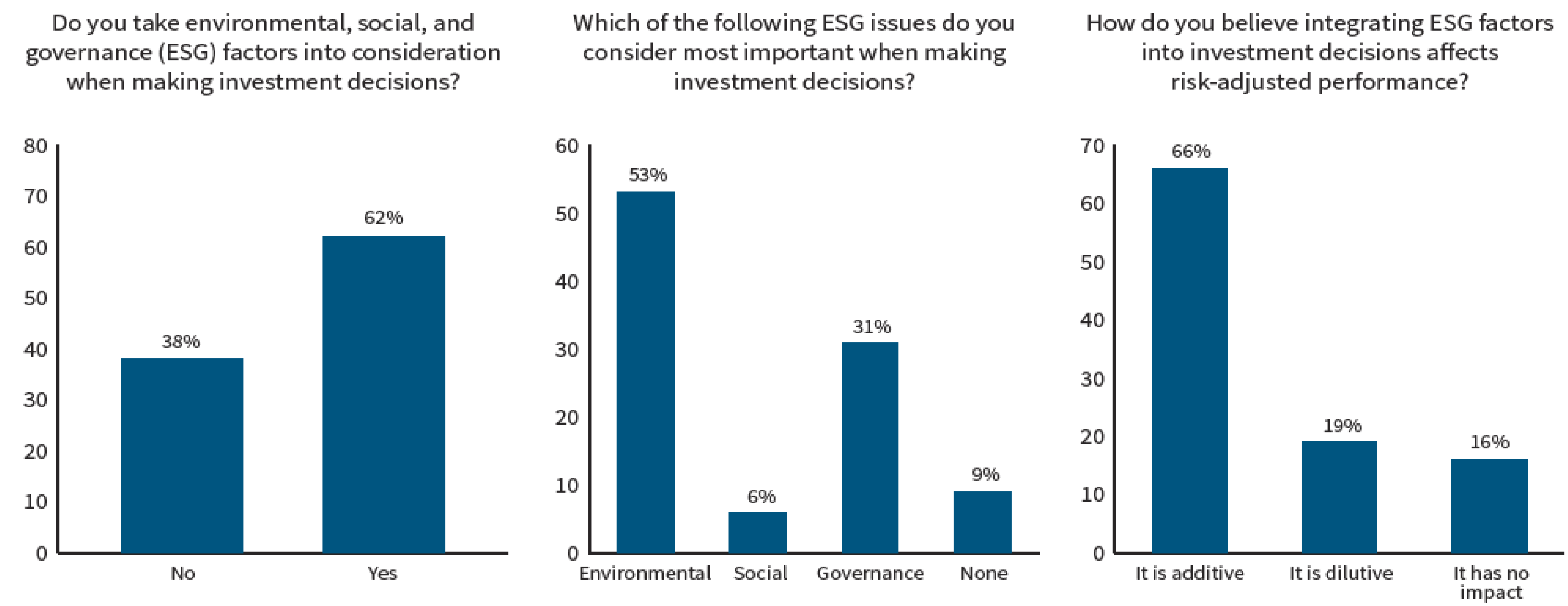
ESG Integration Philosophy

Interest in environmental, social and governance (ESG) factors is expanding at a rapid pace among institutional and retail investors.

How Do Investors View ESG?

1. **Figure 1** - Most respondents to a June 2017 William Blair poll (**62%**) think it makes sense to incorporate ESG into investment decisions.
2. **Figure 2 -** When asked which factor (**E, S** or **G**) investors considered most important in making investment decisions, **Environmental** was ranked first (at 53%), followed by **Governance** (at 31%), **None** (at 9%) and **Social** (at 6%).

Figure 1:



Source: William Blair, as of June 2017.

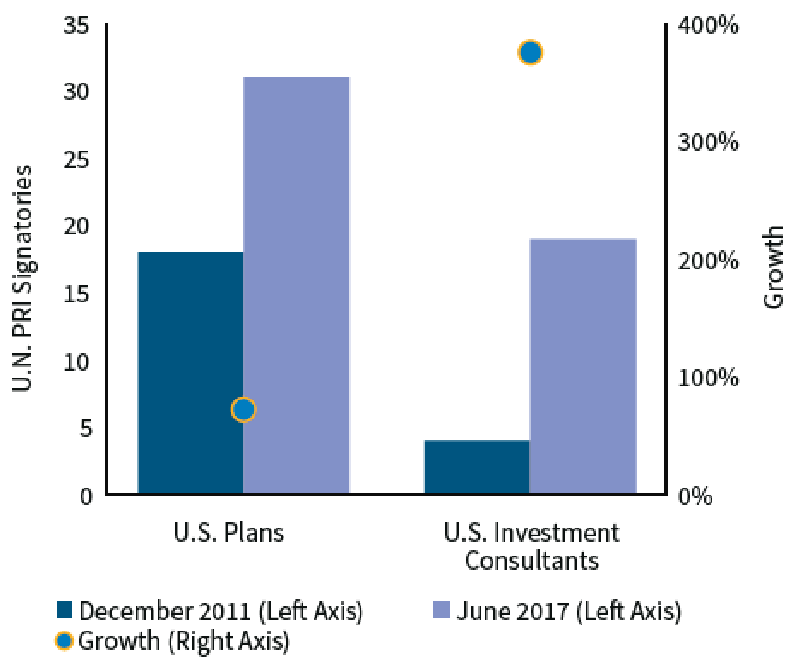
Figure 3 - About 66% of poll respondents "believe integrating ESG factors" into investment decisions has a positive affect on performance.

Increasing Emphasis on ESG Among U.S. Plan Sponsors

Figure 2 shows that **U.S. plan sponsor signatories** to the *"Principles for Responsible Investing"* **(PRI)** grew from **18% in December 2011** to **over 30% in June of 2017.**

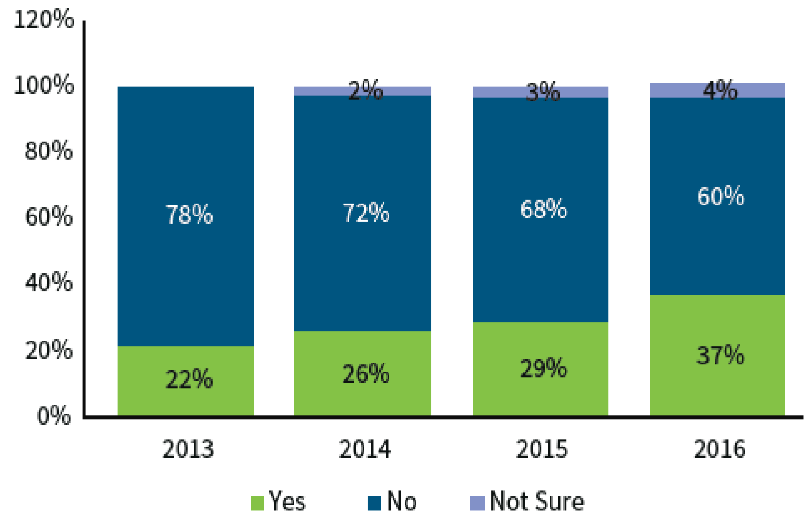
Figure 3 illustrates that **ESG** factor adoption by U.S. Institutional plans increased significantly from **22% in 2013** to **37% in 2016.**

Figure 2:
PRI Adoption by U.S. Plans and Consultants



Source: InterSec Research, as of June 2017.

Figure 3:
U.S. Institutional Plan Adoption



Source: Callan.

ESG integration has been supported by recent guidance from the U.S. DOL clarifying that ESG factors are not inconsistent with fiduciary duty. This recent guidance has effectively removed what had been a barrier to broader consideration of ESG by plan sponsors.

Executive Summary

Introduction

2017 ESG Survey

In August 2017, Callan conducted our fifth annual ESG survey. The results reflect input from 105 unique institutional U.S. funds with more than $1.1 trillion in assets.

Over the last five years, these surveys reveal that U.S.-based institutional investors have increasingly incorporated environmental, social, and governance (ESG) considerations into their investment decision-making process. After several years of education around ESG issues, in 2017 overall incorporation rates held steady with the previous year at more than one-third of total funds.

ESG factor incorporation levels off after years of steady growth

Overall incorporation of ESG factors into investment decision-making plateaued at 37% of respondents in 2017, on par with 2016 (37%) and up from 2013 (22%). This trend reflects changing survey respondents over time (a larger portion of smaller and corporate funds responded in 2017 than in previous years), as well as multiple years of investor education around ESG coming to fruition. Further suggesting a plateau in adoption rates, 7% of respondent firms that have not yet incorporated ESG factors into investment decisions were considering doing so in the future, down from 22% in 2016.

By fund type, we note a slight dip in the rate of ESG incorporation among corporate and endowment funds compared to 2016 (likely due to sample changes over time) while other fund types saw a continued rise in adoption:

– 35% of public funds indicated they incorporate ESG factors into the investment decision-making process, up from 25% in 2016

– Foundations reported the highest rate of ESG incorporation at 56% in 2017 (vs. 48% in 2016)

The largest of funds (with $20 billion in AUM or more) continued to incorporate ESG factors into the investment decision-making process at a much higher rate than their smaller counterparts: 78% for the largest funds compared to 30% for the smallest funds ($500 million in assets or less).

Key Findings

Callan's fifth annual *2017 ESG Survey* reflects trends on ESG adoption for U.S. institutional funds. The results reflect input from 105 unique institutional U.S. funds and trusts with more than $1.1 trillion in assets.

7%

of those who have not yet incorporated ESG factors are considering it

50%

of those who have incorporated ESG added language to the investment policy statement

78%

of largest funds have incorporated ESG factors into investment decisions

Most frequently cited reason to incorporate ESG:

My fund must consider ESG factors as part of our fiduciary responsibility

68%

Increase in the rate of ESG adoption since inception of survey in 2013

ESG incorporation by region

Pacific	53%
Northeast	44%
Central	32%
Southeast	21%
Mountain	20%

88%

of corporate funds surveyed incorporated ESG factors in order to complete their fiduciary duty

56% foundations

39% endowments

35% public funds

25% corporate

41%

of respondents define ESG using the literal definition, implying an acceptance of the definition provided by managers hired

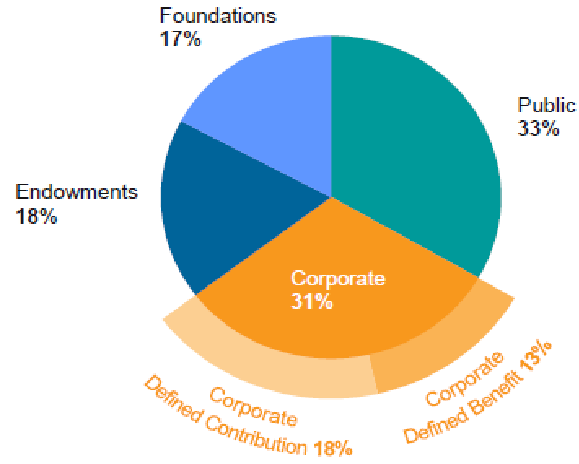
Respondent Overview

105 funds and trusts responded to the survey; approximately one-third public funds, one-third corporate funds, and one-third endowments & foundations

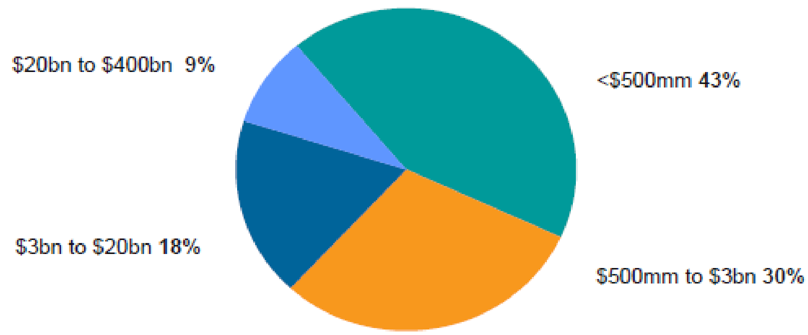
>$1.1 trillion in total assets are represented in this survey

43% of respondents are "small" funds with $500 mm or less in assets; smaller funds are less likely than their larger counterparts to adopt ESG practices

Respondents by Fund Type



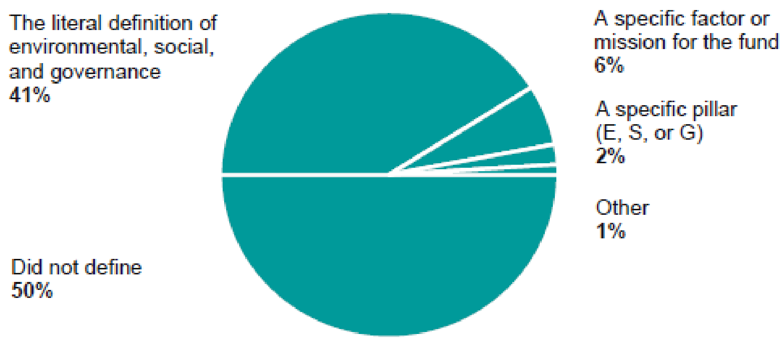
Respondents by Fund Size



Defining ESG

How Funds Define ESG

Callan has found that definitions of ESG vary widely in the industry. Logically, defining ESG is often the first step many funds take in exploring implementation.



50%

of respondent firms did not define or attempt to define ESG in 2017, up from 33% in 2016.

41%

defined ESG using the literal definition of environment, social, and governance considerations, up from 35% in 2016.

Fewer funds (8%) defined ESG by a specific pillar, factor, or mission than a year ago (17%), suggesting broadening definitions of ESG beyond individual issues that can be targeted for divestment.

ESG Factor Adoption Rates

Callan asked whether or not respondent funds have "incorporated ESG factors into investment decision-making." This language is intentionally broad in order to capture as many potential implementations as possible that reflect the prevalence of ESG considerations in the institutional investment arena.

Overall: The percentage of respondents in 2017 that had incorporated ESG factors into decision-making leveled off at 37%, on par with 2016 (37%). This trend reflects changing survey respondents over time (a larger portion of smaller and corporate funds responded in 2017 than previous years), as well as multiple years of investor education around ESG coming to fruition.

By Fund Type: Foundations and endowments have been the greatest adopters of ESG compared to other fund types over the last five years and in 2017 at 56% and 39%, respectively. Corporate funds saw a decrease in ESG adoption year over year, from 30% in 2016 to 25% in 2017, but an overall increase from 15% five years ago. Corporate defined benefit plans saw a modest dip in adoption from 29% in 2016 to 25% in 2017. This was after a leap from 7% in 2015, which Callan partially attributes to the Department of Labor's 2015 bulletin clarifying that investment strategies that consider ESG factors can be in compliance with their fiduciary duty under ERISA. More than one-third of public funds reported incorporating ESG (35%) in the 2017 survey, up from 25% in 2016.

By Fund Size: The majority (78%) of the largest respondents ($20 bn or greater) have incorporated ESG factors into investment decisions. The largest funds have incorporated ESG factors at the highest rate since the inception of the survey in 2013, while smaller funds are less likely to make ESG considerations part of the investment process.

By Region: 2017 survey respondents were from across the U.S.: 36% Central, 26% Northeast, 18% Southeast, 15% Pacific, and 5% Mountain. The Pacific region had the highest percentage of funds incorporating ESG factors at 53%, followed by the Northeast (44%) and Central (32%).

Looking Forward: Only 7% of respondents that have not yet incorporated ESG into investment decision-making are considering doing so. This is less than one-third of the amount considering this decision in 2016 (22%), suggesting many of the firms that have expressed interest in ESG are on the path to implementation or have decided not to implement.

ESG Factor Adoption Rates Overall

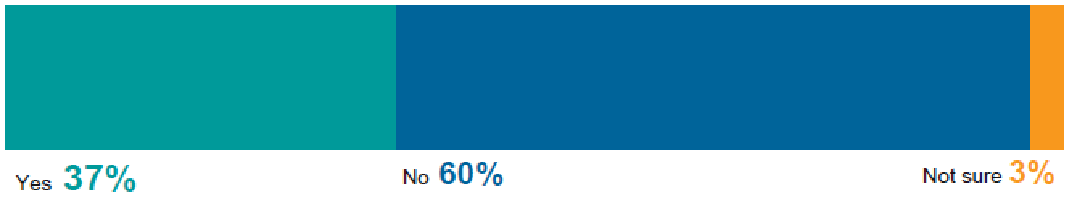
37%

of respondents had incorporated ESG factors into investment decisions in 2017, on par with 2016. The 2017 survey reflects a greater portion of responses from smaller funds (<$500 mm) and corporate funds, which are less likely than larger funds and other fund types to incorporate ESG into the investment process.

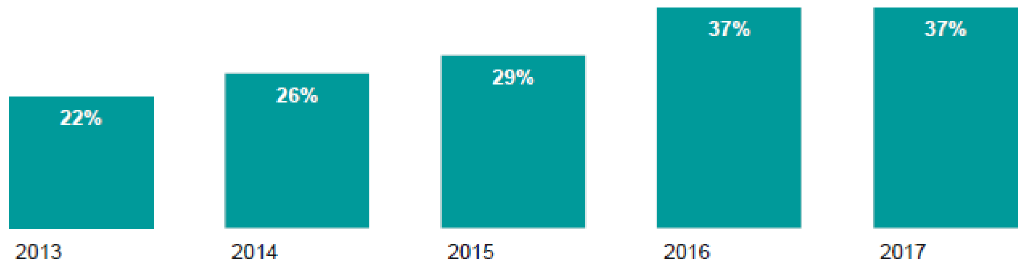
68%

increase in respondents that have incorporated ESG factors into investment decisions from 2013 to 2017.

2017: Does your fund incorporate ESG factors into investment decisions?



Funds that have incorporated ESG factors into investment decisions over time

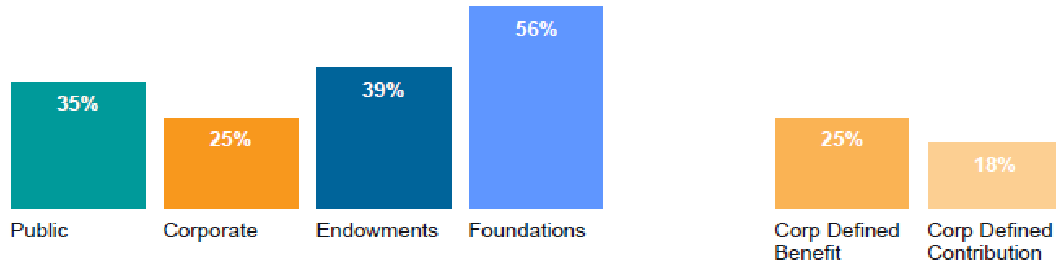


ESG Factor Adoption Rates by Fund Type

56%

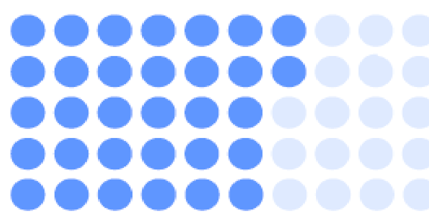
of foundations have incorporated ESG factors into investment decisions, the 2017 survey found. Foundations have incorporated ESG factors at a higher rate than all other fund types in 4 out of the 5 years that Callan has fielded this survey.

2017 funds that are incorporating ESG factors into investment decisions



By fund type over last five years

2013	2014	2015	2016	2017
Foundations 31%	Foundations 35%	Foundations 39%	Endowments 53%	Foundations 56%
Endowments 22%	Endowments 34%	Endowments 37%	Foundations 48%	Endowments 39%
Corporate 22%	Public 22%	Public 27%	Corporate 30%	Public 35%
Public 15%	Corporate 15%	Corporate 15%	Public 25%	Corporate 25%



64%

of foundations have incorporated ESG factors into investment decisions in 2017 or are considering doing so in the future.

ESG Factor Adoption Rates by Fund Size

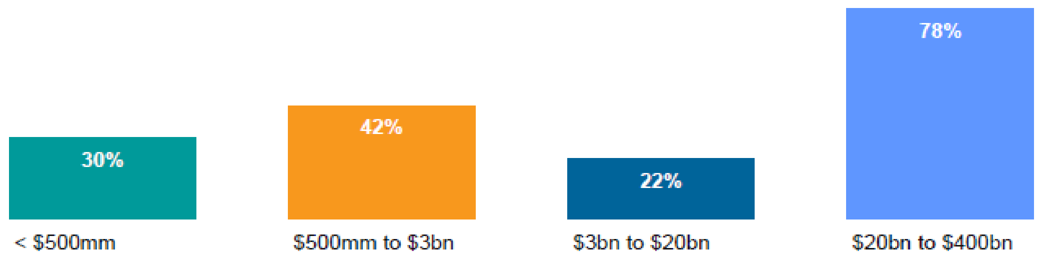
78%

of the largest respondents (>$20 bn) have incorporated ESG factors into investment decisions. The largest funds have incorporated ESG factors at the highest rate since the inception of the survey.

136%

Increase in respondents >$20bn that have incorporated ESG factors into investment decisions from 2013 to 2017.

2017 funds that are incorporating ESG factors into investment decisions



By fund size over last five years

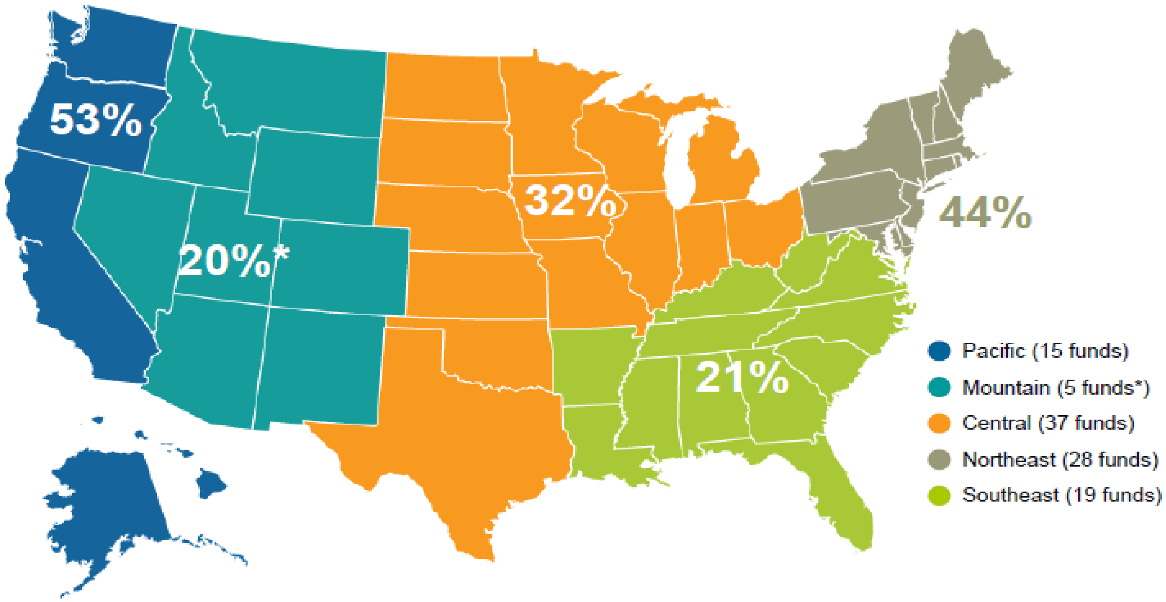
$20bn to $400bn **33%**	$20bn to $400bn **31%**	$20bn to $400bn **35%**	$20bn to $400bn **71%**	$20bn to $400bn **78%**
$3bn to $20bn **29%**	$500mm to $3bn **24%**	$3bn to $20bn **31%**	<$500mm **39%**	$500mm to $3bn **42%**
$500mm to $3bn **23%**	<$500mm **22%**	<$500mm **26%**	$3bn to $20bn **33%**	<$500mm **30%**
<$500mm **20%**	$3bn to $20bn **18%**	$500mm to $3bn **26%**	$500mm to $3bn **29%**	$3bn to $20bn **22%**
2013	2014	2015	2016	2017

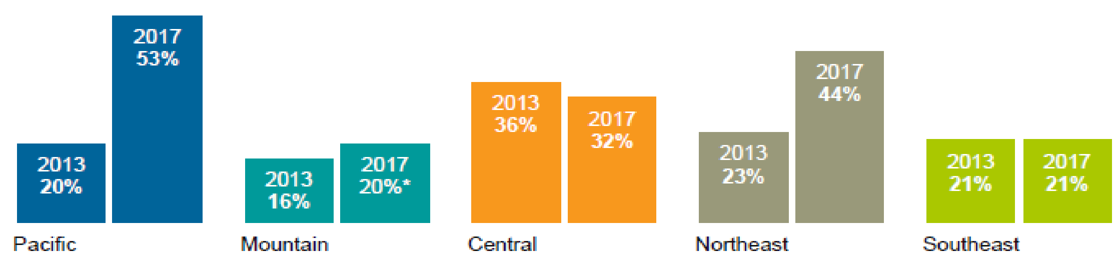
ESG Factor Adoption Rates by Region

165%

increase in rate of Pacific region respondents that have incorporated ESG factors into investment decisions over a five-year period.

2017 funds that are incorporating **ESG** factors in investment decisions by region





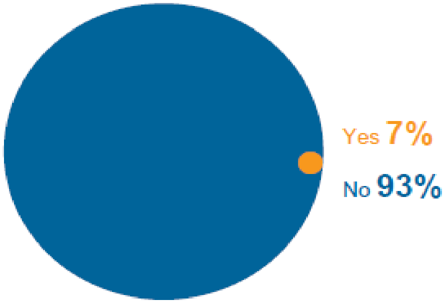
*Note the small sample size.

ESG Factor Adoption Rates Looking Forward

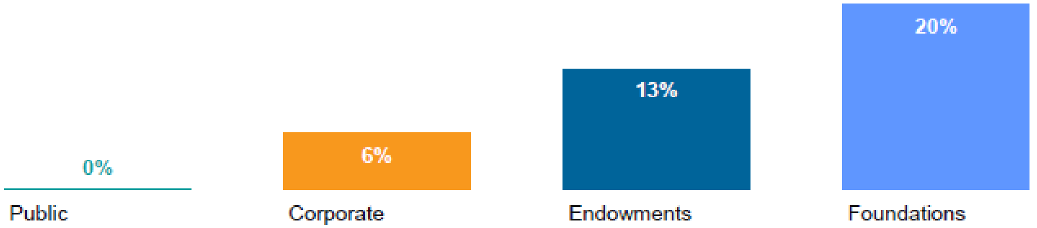
70%

decrease in the percentage of respondents that are considering incorporating ESG factors into investment decisions.

If you have not incorporated ESG factors into investment decisions, are you considering it?



Share of respondents that have not incorporated ESG factors into investment decisions but are considering it (by fund type)



ESG Implementation

Similar to ESG definitions, implementation strategies vary substantially from fund to fund, as investors find the approach that best accomplishes their unique goals. Callan asked survey respondents that have incorporated ESG factors into investment decisions specifically how they had done so to gauge which implementation strategies are most prevalent.

The top implementation method for survey respondents that are incorporating ESG into investment decisions in 2017 was to add language to the investment policy statement (50%), which was also the most common implementation method in 2016 (53%). Callan finds that adding language to investment beliefs or policy statements is frequently a first step that many institutional investors take when pursuing an integrated approach to incorporating ESG factors in investment decisions.

The next most prevalent implementations were:

– to communicate to their investment managers that ESG is important to the fund,

– to hire a manager that has incorporated ESG, and

– to incorporate a screening process and to communicate to investment managers that ESG is important to the fund (42% each).

A negative screening process can address a specific issue (e.g., screen out investments related to tobacco or fossil fuels), but positive screening is also becoming more prevalent (e.g., screen to include only securities that have best practices in a specific sector). Engagement/proxy voting ranked fifth, with 32% of investors utilizing this method. One-fifth of respondents (21%) indicate they are a Principles for Responsible Investment (PRI) signatory, double the rate in 2016 (10%).

ESG Implementation

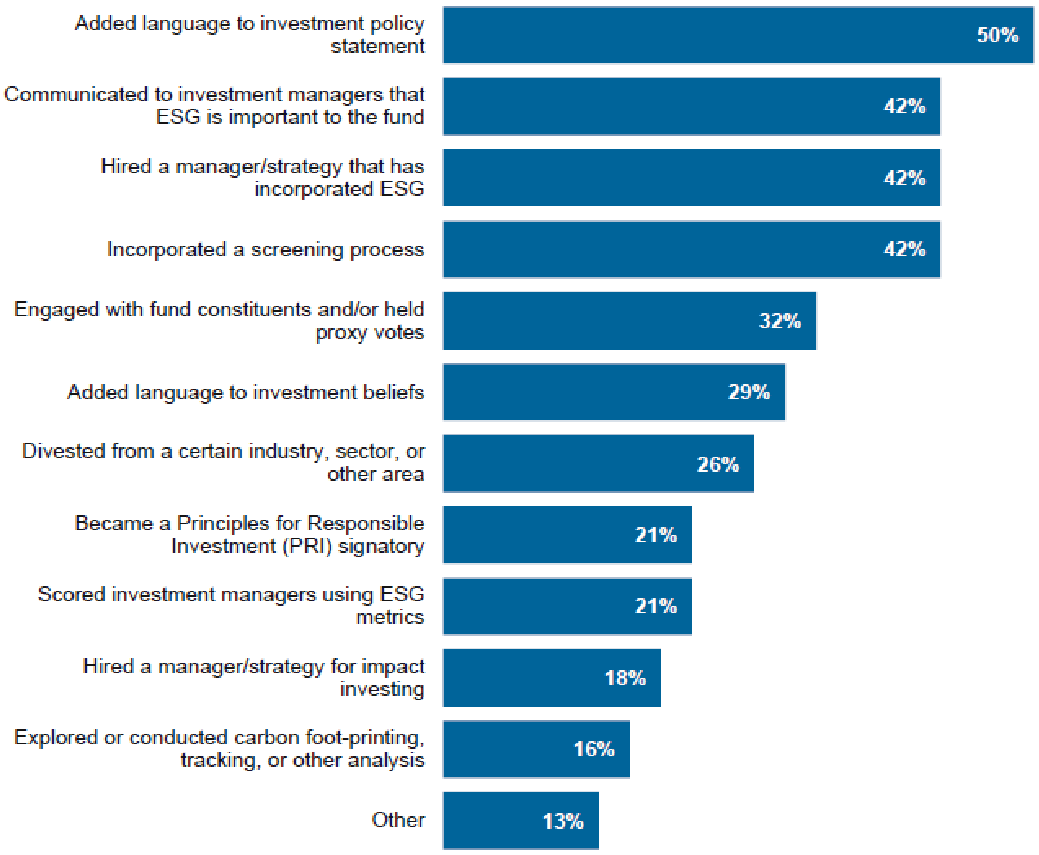
"Other" responses include:

"Divested [out] of industries with negative environmental records"

"Adopted a five-year strategic plan for ESG which includes KPIs, milestones, with targets included in senior staff performance targets"

"Use [consultant] on an ad hoc basis for ESG analysis of managers"

Implementation methods for incorporating ESG factors into the investment decision-making process



Reasons For and Against ESG

Reasons to Use ESG Factors

On the following page we show the motivations for incorporating ESG into investment decision-making. The order of these factors has changed little over the past two years; the top reasons cited for incorporating ESG factors into investment decisions in 2017 were:

– 47%: My fund must consider ESG factors as part of our fiduciary responsibility

– 42%: The fund's investment policy statement dictates that we consider ESG factors

– 32%: We expect to achieve higher returns AND we expect to achieve an improved risk profile

Explicitly documenting ESG factors by way of the investment policy statement (IPS) was a common implementation approach among all fund types except corporate funds. Half of public funds and foundations and 43% of endowments indicated their IPS dictates that they consider ESG factors. Ironically, only 13% of corporate funds' IPS dictated that ESG factors should be considered even though 88% of corporate respondents indicated they must consider ESG factors as part of their fiduciary responsibility.

Reasons Not to Use ESG Factors

More than half (61%) of U.S. institutional investors that responded to our survey in 2017 have not incorporated ESG factors into investment decision-making, in line with 2016 (60%). The most common reason cited in 2017 was that the fund would not consider any factors that are not purely financial in the investment decision-making process (41%).

The next most popular answer in 2017 was that the value proposition for ESG remains unclear (39%), down from 63% in 2016. This was especially true among endowments (86%) that do not incorporate ESG factors into investment decision making.

Reasons For and Against ESG

88%

of corporate funds surveyed utilize ESG factors in order to fulfill their fiduciary duty.

More investors expect to improve their fund's risk profile by applying an ESG lens in 2017 (32%) than fiver years ago (17%).

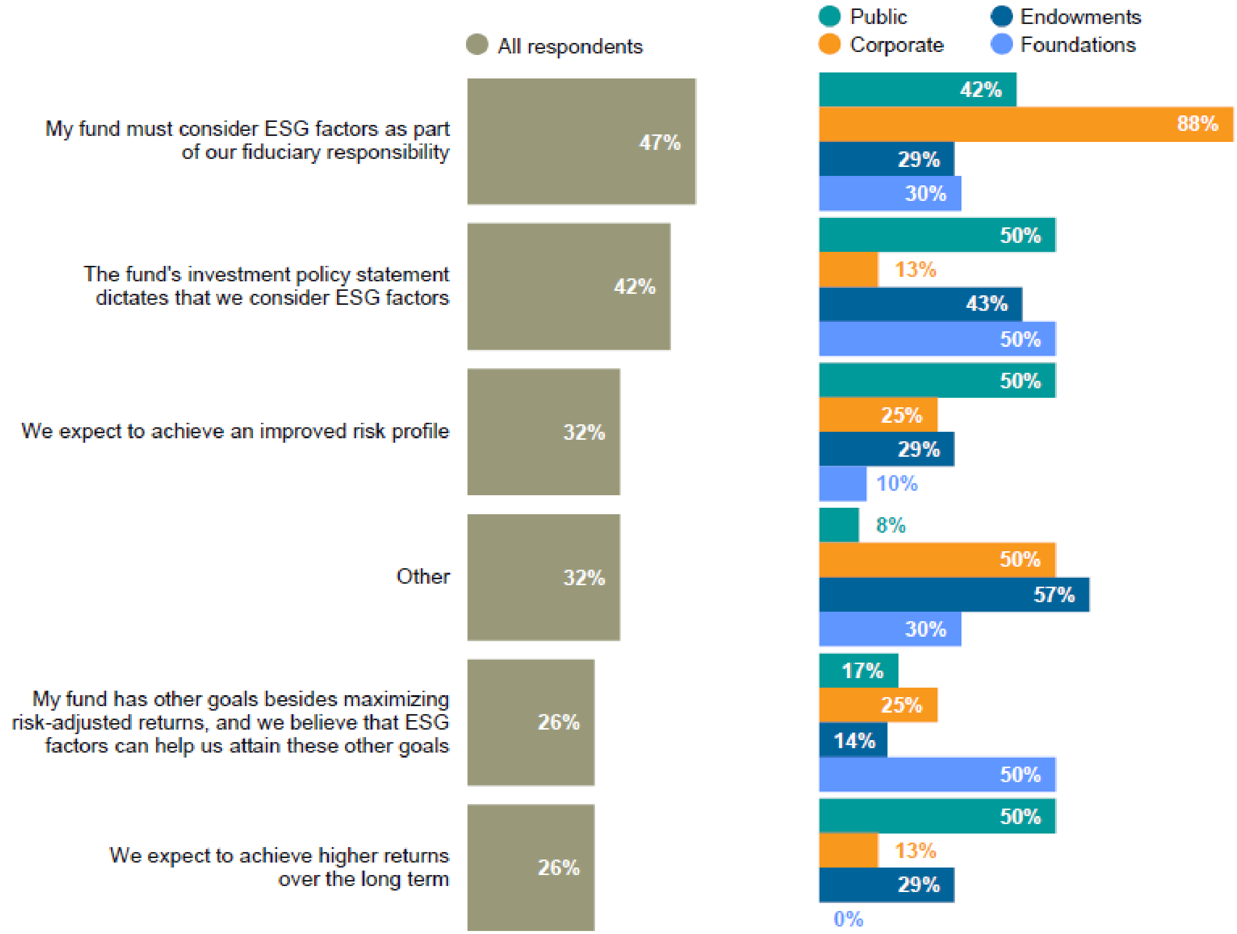
"Other" responses include:

"Participants desire to incorporate"

"We believe it is an important attribute for certain generations of participants"

"Mission alignment with our organization"

Reasons for incorporating ESG factors into the investment decision-making process*



* Multiple responses were allowed.

Conclusions

The percentage of U.S. investors that have incorporated ESG factors into decision-making has leveled off at 37% in 2017, on par with 2016 (37%) and up 68% relative to five years ago (22%).

Fund Type and Size Matter: Foundations and endowments have been the greatest adopters of ESG compared to other fund types over the last five years and remained on top in 2017. One-quarter of corporate funds and around one-third of public funds utilized ESG factors in some fashion in 2017, and all fund types have seen increased adoption over the last five years. The larger the fund, the more likely it was to incorporate ESG into investment decisions.

Implementation Varies: How to best implement ESG factors into investment decisions varies substantially from fund to fund, as investors find the approach that best accomplishes their unique goals. The top implementation methods in 2017 were:

- 50%: adding language to the investment policy statement
- 42%: communicating to their investment managers that ESG is important to the fund
- 42%: hiring a manager that has incorporated ESG
- 42%: incorporating a screening process and communicating to investment managers that ESG is important to the fund

Perceptions Change: Years of education around ESG issues and increased awareness of the vast options available to investors have changed how they think about the space. Today fewer investors are unclear on ESG's value proposition than five years ago (39% in 2017 vs. 53% in 2013), and more expect to improve their fund's risk profile by applying an ESG lens (32% in 2017 v. 17% in 2013).

Looking Forward: Climate change, fossil fuel-free investing, and the regulatory environment are a few examples of ESG issues that have been covered by the press in recent years. While fewer survey respondents in 2017 were considering new implementations of ESG in their investment decision-making processes than previous years (7% vs. around one-fifth, historically), perceptions and approaches to implementation have shifted over time. Callan will closely follow these trends as the ESG landscape for data availability and factor integration continues to evolve.

About the Authors

Shane Blanton is a Senior Analyst in Callan's Published Research Group covering business analytics. He is responsible for data analysis and visualization to support Callan's research endeavors. In addition, he is responsible for measuring and benchmarking Callan's communications campaigns. Previously Shane was a member of the Analytical Solutions Group for three years, training Callan's clients to use PEP software.

Prior to joining Callan, Shane worked as an Account Manager for an IC packaging manufacturer, and also worked as a trading assistant to a proprietary options firm. Shane attended Carnegie Mellon University, where he earned a B.S. in Business Administration.

Anna West is a Senior Vice President dedicated to Callan's research and education initiatives. As Director of the Callan Institute and Co-Manager of the Published Research Group, she oversees the educational content presented at the Callan Institute workshops and conferences. She also works with subject matter experts across Callan to produce white papers, surveys, charticles, and other research for investors. As chair of Callan's Environmental, Social, and Corporate Governance (ESG) Committee, Anna covers ESG trends and developments. Anna is also a member of Callan's Emerging and Minority, Women, or Disabled-owned Managers Committee and is chair of the Institute Advisory Committee. She is a shareholder of the firm.

Anna joined Callan in August 2006. Prior to Callan, she worked for Vail Resorts, Inc. She earned an MBA from the University of San Francisco and a BA in International Business and French from Washington University.

NDSIB Investment Due Diligence

The SIB and RIO have a deep understanding of the importance of investment due diligence and consider <u>Environmental, Social and Governance</u> (ESG) factors to be one of the many factors that inform our investment decisions

In 2017, RIO expanded its annual investment manager due diligence questionnaire by adding numerous ESG related questions including:

1. Does the firm have a policy addressing its approach to incorporating sustainable and responsible investment factors into its investment process? If so, please provide a copy of the policy and the extent of its use in current investment strategies. If not, please explain the rationale.
2. Please describe what ESG data, research, consultants, tools and practices are used and how they are incorporated into the investment and risk management process.
3. Have there been any changes in the firm's ESG practices, policies, applications or reporting in the past year. If so, please explain the changes.
4. Please describe what metrics are used to measure the impact of ESG investing practices.
5. Does the firm include climate related factors into its investment process including the measurement and monitoring of the carbon footprint of its investment portfolio? If yes, please explain the assessment process. If not, please explain the rationale.

In 2018, RIO's due diligence questionnaire will be further expanded and inquire if the firm is a signatory to the United Nations Principles for Responsible Investing (UNPRI). As of Dec. 31, 2017, RIO believes that over 85% of its investment managers are UNPRI signatories (based on AUM) and over 95% of its strategic partners (firms with SIB client AUM over $250 million).

THE SIX PRINCIPLES

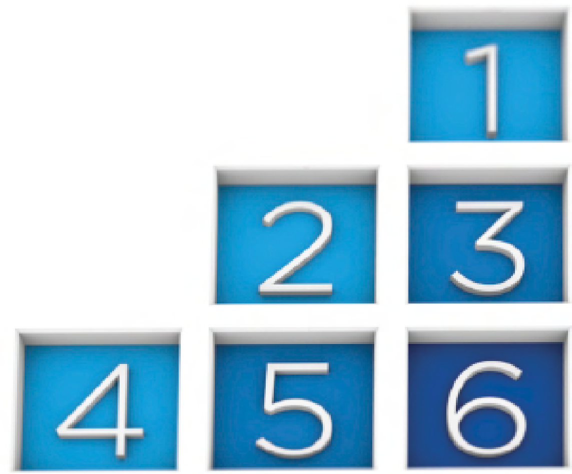
United Nations
Principles for Responsible Investing

https://www.unpri.org/about/pri-teams/policy

PREAMBLE TO THE PRINCIPLES

As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time). We also recognise that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

1. We will incorporate ESG issues into investment analysis and decision-making processes.
2. We will be active owners and incorporate ESG issues into our ownership policies and practices.
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.
4. We will promote acceptance and implementation of the Principles within the investment industry.
5. We will work together to enhance our effectiveness in implementing the Principles.
6. We will each report on our activities and progress towards implementing the Principles.



PRI's MISSION

We believe that an economically efficient, sustainable global financial system is a necessity for long-term value creation. Such a system will reward long-term, responsible investment and benefit the environment and society as a whole.

The PRI will work to achieve this sustainable global financial system by encouraging adoption of the Principles and collaboration on their implementation; by fostering good governance, integrity and accountability; and by addressing obstacles to a sustainable financial system that lie within market practices, structures and regulation.

INTRODUCTION

The US is the world's largest capital market, and American investors are increasingly focused on long-term investment approaches that require the inclusion of environmental, social and governance (ESG) factors. The US is also the PRI's single largest market with more than 345 signatories and $36 trillion in assets under management. In recent years, we have seen US policy makers and regulators seek input on or adopt policies that help promote or support long-term value creation.

Demand for responsible investment is rooted at the investor level, where many US asset managers and owners have embraced, embedded and endorsed ESG incorporation as vital for achieving long-term value creation and a sustainable financial system. According to the US SIF, socially responsible investments increased by 33% to more than $8.5 trillion from 2014 to 2016[1]. Also promising is that 30% of corporate retirement plans now incorporate ESG factors into their investment decisions[2].

Recent investor-led developments demonstrate the level of support and momentum across the country to manage long-term risks and generate value. For example, we saw significant progress on active ownership in 2017. Shareholders of Exxon Mobile and Occidental Petroleum voted in favor of requiring greater disclosures related to climate risks. Several states, localities and other entities have also committed to the Paris Climate Agreement, seeing the clear investment risks related to climate change and the need for supportive policy environments for long-term investor returns.

This briefing discusses recent policy developments – particularly around fiduciary responsibilities, stewardship and financial disclosures – that could, or perhaps already have, impacted ESG integration in the US. It is not intended to be comprehensive, but is a starting point for discussions with our signatories on the PRI's policy views and US engagement strategy.

Highlights of the briefing include:

- Support for recent Labor Department (DOL) policies acknowledging that ESG issues can contain financial value and that retirement plan fiduciaries may take ESG factors into account when exercising their right to vote.
- Concern with legislative efforts, such as the Financial CHOICE Act, that could weaken the ability of shareholders to engage with companies and fellow investors on corporate governance and risk management.
- Calls for increased ESG-related disclosures to enable investors to make more informed decisions about long-term value creation that can support a more sustainable financial system.

While the majority of the PRI's policy efforts in the US have been focused at the federal level, several state and local public pension systems have committed to ESG integration. As part of the Fiduciary Duty in the 21st Century project, we intend to take a deeper dive into ESG integration at the state level in 2018.

We strongly encourage all of our signatories to share their views on existing and new policy proposals. We welcome your feedback on past and current work. To become better engaged, signatories can:

- Subscribe to our policy newsletter to receive updates on the PRI's policy work.
- Join our recently formed Global Policy Reference Group (GPRG) comprised of leading policy professionals from around the world. The purpose of the group is to ensure the PRI's, and our signatories', policy engagement is current, international and aligned with responsible investment objectives. If you are interested in joining the GPRG, please email jenny.waits@unpri.org.
- Attend the PRI's annual conference – PRI in Person – in San Francisco, September 12 – 14, 2018. For additional information please visit our events website, where you can also view highlights from the 2017 conference in Berlin.

FIDUCIARY RESPONSIBILITIES

ESG GUIDANCE

In October 2015, the DOL issued critical guidance (Interpretive Bulleting 2015-01), which acknowledged that ESG factors can have a financial impact on retirement plan investments. This was the third bulletin relevant to ESG integration and the Employee Retirement Income Security Act of 1974 (ERISA), released by the DOL, since 1994. ERISA sets the rules for private retirement plans in the US. While the Clinton Administration issued guidance stating that ESG factors could be used as "tie-breakers" when all other factors were considered equal, the Bush Administration walked back this approach with guidance in 2008, stating that non-economic factors should rarely be considered during investment analysis. Unsurprisingly, this caused significant confusion among plan fiduciaries.

The Obama Administration echoed sentiments from the guidance issued under the Clinton Administration, stating that ESG factors could be used when all other factors were considered equal. However, the DOL also stated that when ESG factors have economic value, they are "**more than just tie-breakers, but rather are proper components of the fiduciary's analysis of the economic and financial merits of competing investment choices**." The PRI, through its Fiduciary Duty in the 21st Century project, concluded that failing to consider long-term investment value drivers, which include ESG issues, in investment practice is a failure of fiduciary duty. We strongly support the 2015 DOL guidance.

CONFLICT OF INTEREST RULE

In April 2016 and after six years in the making, the DOL published its long-awaited Fiduciary Rule. As the retirement landscape in the US continues to change, and more individuals depend on Individual Retirement Accounts (IRAs), the Department sought to ensure that all Americans received retirement advice that was in their best interest. While employer-sponsored retirement programs were already required to be handled by a fiduciary, IRAs were not subject to the same standards. The rule, and its related exemptions, was designed to create a more reliable and transparent retirement system that eliminated conflicts of interest in the market. For example, advisors would no longer be able to recommend products simply because they could result in higher commissions.

The new Administration expressed concern that the implementation of the rule and its related exemptions would lead to increased costs and fewer investment options for consumers. This is a belief held by many business groups, including the Chamber of Commerce and the Financial Services Roundtable that sued the DOL over the rule. In February 2017, President Trump signed a memorandum directing the DOL to re-examine the rule.

While parts of the rule – including the definition of a fiduciary – came into effect in June 2017, the DOL has delayed the effective date for the related exemptions until July 2019. These exemptions, which are a core component of the rulemaking, would have enabled retirement advisors to continue receiving various fees, including commissions, as long as they contractually agreed to put their clients' best interests first. Since this component contained the legally enforceable provision of the rulemaking, the path forward remains uncertain at present (January 2018). The DOL stated that it intends to use the 18-month effective date delay to best determine how to revise or repeal the rulemaking. The PRI supports robust fiduciary standards and policies that lead to a fairer and transparent market.

1 US SIF, 2016 Report Trends Highlights
2 Callan Institute, 2016 ESG Interest and Implementation Survey

STEWARDSHIP (ADVOCACY, ENGAGEMENT, PROXY VOTING)

DOL PROXY GUIDANCE

At the end of the Obama Administration in 2016, the DOL issued Interpretive Bulletin (IB) 2016-1, which confirmed that ESG issues were consistent with shareholder engagement under ERISA. Similar to the DOL's 2015 ESG Guidance, the Proxy IB replaced guidance issued in 2008 and reaffirmed interpretations from guidance that was released under the Clinton Administration in 1994.

The DOL issued the new guidance to address concerns that the 2008 guidance prevented retirement plan fiduciaries from exercising their right to vote on ESG issues. The 2016 preamble states that: "The Department is concerned that IB 2008-2 has been read by some stakeholders to articulate a general rule that broadly prohibits ERISA plans from exercising shareholder rights, including voting of proxies, unless the plan has performed a cost-benefit analysis and concluded in the case of each particular proxy vote or exercise of shareholder rights that the action is more likely than not to result in a quantifiable increase in the economic value of the plan's investment."

The PRI welcomed the 2016 clarification from the DOL. We believe it is essential for shareholders, including retirement plans, to be able to exercise their rights through proxy voting. The Fiduciary Duty in the 21st Century project called on regulators and policy makers to clarify that fiduciaries must take into account ESG issues in their active ownership activities.

Last year, the PRI launched the proxy vote declaration system – a voluntary opportunity for PRI signatories to publicly declare how they intend to vote on shareholder resolutions around ESG issues. This is a way to help build good practice and encourage greater transparency on voting activity.

SEC STAFF LEGAL BULLETIN NO. 141 (CF)

The SEC released new guidance on the issue of shareholder proposals in the form of a Staff Legal Bulletin in November 2017. The most notable change is regarding ordinary business exceptions, which enable boards to table a resolution that "deals with a matter relating to the company's ordinary business operations." Staff Legal Bulletin No. 141 delegates greater responsibility to the board on ordinary business exceptions. It states that when a company submits a no-action request to the SEC to use the exception, the organization should now include an analysis from the board on the issue at hand.

The 2018 proxy season will shed more light on how this change impacts the no-action request process. However, shortly after the Bulletin's release, Apple Inc. sent the SEC no-action request letters on shareholder proposals relating to climate and human rights issues, referencing the new guidance. Some have expressed concern that the new process could enable more resolutions to be excluded from consideration.

In a speech in November 2017, SEC Chairman Jay Clayton said: "History has shown that shareholder proposals can gain traction and lead to corporate governance changes that better track the long-term interests of Main Street investors. They also create costs, including out-of-pocket costs and the use of board and management time, that otherwise could be devoted to the operation of the company itself." While the Chairman said he would like to address issues around the proxy process, proposed changes would not come for some time.

THE FINANCIAL CHOICE ACT AND THE CORPORATE GOVERNANCE REFORM AND TRANSPARENCY ACT

The PRI remains concerned about legislation that could weaken shareholder rights. The Financial CHOICE Act (H.R.10) was introduced by Financial Services Committee Chairman Jeb Hensarling and passed the House of Representatives in June 2017 without any Democratic support. The bill would mandate that shareholders seeking to submit proposals on a corporate ballot must own at least 1% of the company's outstanding stock over a three-year period, compared to the current $2,000 threshold for one or more years.

The proposal seeks to eliminate the ability of all but a few investors to file resolutions and exercise their voting rights through the shareholder proposal process. Such a change would reduce corporate accountability to long-term investors. The PRI sent a letter to the Financial Services Committee opposing these changes. The Trump Administration has endorsed the provision, revising the $2,000 shareholder proposal threshold and the current resubmission thresholds.

The CHOICE Act also repeals several provisions of the Dodd-Frank Act, which was passed in 2010 after the Financial Crisis to curb risky behaviour by financial institutions and help facilitate a more transparent and sustainable system. In February 2017, President Trump signed an Executive Order (EO) instructing Treasury Secretary Steve Mnuchin to review financial regulations in place and to put forward policy recommendations within 120 days. This resulted in the Treasury Department releasing a series of reports entitled Financial System That Creates Economic Opportunities. One common theme throughout the recommendations is the goal of reducing the number of regulations in place for financial markets – and, in particular, rolling back those created by Dodd-Frank.

The Senate is unlikely to pass the CHOICE Act in its current form. However, it is possible that the Senate will consider different provisions within the bill or that the SEC carries out some of the changes through rulemaking.

The Corporate Governance Reform and Transparency Act (H.R.4015), which passed the US House of Representatives in December 2017 with bipartisan support, would significantly weaken the role institutional investors play in the corporate governance of US companies. The bill requires that proxy advisory firms submit their recommendations to companies prior to publication. If a proxy advisory firm must share its recommendation to management before sharing it with investors, the recommendations have the potential to be biased towards management. As a result, this legislation threatens to undermine equity owners' ability to receive independent information.

We are also concerned that H.R.4015 would impose additional disproportionate compliance costs on proxy advisory firms and add substantial expense to institutional investors. The legislation requires that proxy firms register with the SEC and employ an ombudsman to receive complaints "from the subjects" of voting recommendations. The PRI expressed these concerns in a letter to the Committee ahead of the bill's markup. There is currently no companion bill in the Senate.

THE INVESTOR STEWARDSHIP GROUP PRINCIPLES

In addition to federal policy initiatives, several US investors have put forth and are adhering to a voluntary stewardship code. In February 2017, the Investor Stewardship Group (ISG), a body of large US and international investors, launched a Stewardship Framework for Institutional Investors. The ISG members, representing more than $22 trillion in assets under management, have committed to a set of stewardship principles that require them to evaluate the corporate governance activities of their investee companies and work alongside issuers to encourage adoption and implementation.

The ISG has formalized six principles around corporate governance and six around stewardship. The framework holds institutional investors accountable as stewards of others' money and requires transparency and a commitment to working alongside companies in a constructive manner. Similarly, for public companies, boards are independent, but accountable to shareholders who have a right to vote their interest. The framework goes into effect in January 2018. Several ISG signatories and endorsers are also PRI signatories; we strongly support the efforts of the group.

REPORTING AND RESPONSIBILITY

SEC'S REGULATION S-K

The SEC, under the Regulation S-K framework, requires that public companies file annual disclosure reports. In 2010, the SEC issued guidance "to remind companies of their obligations under existing federal securities laws and regulations to consider climate change and its consequences as they prepare disclosure documents to be filed with us and provided to investors." While the 2010 guidance was a welcome step, little has been done since then to standardize climate-related disclosures.

Despite a lack of enforcement of the 2010 guidance, the SEC sought to update disclosure requirements in April 2016. The Commission issued a Concept Release seeking public comments on efforts to modernize disclosure requirements, including a provision on ESG factors, under Regulation S-K. The PRI welcomed the solicitation and submitted a comment letter requesting that the Commission formally adopts the term "ESG factors." We also put forth recommendations that included requiring a standardized method of reporting ESG risks and opportunities, along with demonstrating clear links to the company's business model, in annual corporate disclosures. However, the SEC has not indicated support for new guidance on this issue in the near future.

FORM 5500 REPORTING

In 2016, the DOL issued a proposed rulemaking to modernize Form 5500, which is the required annual public disclosure form for ERISA-governed retirement plans. As part of the proposal, the DOL sought public comments on whether it should require information on ESG investments.

The PRI believes that clear disclosures of ESG factors would provide valuable information about various risks and opportunities for retirement plans. With that in mind, we submitted a comment letter to the DOL. Since the change of Administration, the DOL's project has been placed on hold.

CONFLICT MINERALS DISCLOSURES

The Dodd-Frank Act required the SEC to issue a rule around certain companies disclosing the use of conflict minerals – tantalum, tin, gold or tungsten – in products. The intent was to provide investors with relevant information about the origins of materials and help reduce violence in the mining areas of the Democratic Republic of Congo and nearby regions. The final rule has had a series of legal challenges on the issue of freedom of speech.

Republicans in Congress have repeatedly tried to repeal the rule on the basis that the disclosures are burdensome, require increased supply chain tracking that impose additional costs, and that the information is unnecessary for investment decisions. The Financial CHOICE Act included a repeal provision, a standalone repeal bill passed out of the House Financial Services Committee, and there have been several attempts by the House to defund the SEC's enforcement of the program through appropriation bills.

The PRI supports strong disclosure requirements around conflict minerals. From October 2009 through September 2012, a group of PRI signatories, led by Hermes Fund Managers and representing $635 billion in assets under management, engaged with 18 consumer electronics companies in the US, Europe and Japan on the topic of conflict minerals. The engagement achieved positive results. Based on an evaluation of company performance and disclosure among the companies following the PRI engagement evaluation framework, scores for overall company performance increased by an average of 23% from 2010 to 2011. Several investors in the group actively participated in the development and adoption of the SEC's Conflict Minerals Rule.

VOLUNTARY STANDARDS

The Sustainability Accounting Standards Board (SASB) has developed standards that allow for comparability across industries and a framework of materiality-focused, industry-specific key performance indicators to improve ESG integration for investors and companies. Last year, the PRI joined SASB in hosting a webinar on how SASB standards can help PRI signatories fulfill their PRI commitments and adhere to the values that undergird the PRI principles.

The Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), which is co-chaired by Michael Bloomberg, recently put forth disclosure recommendations that marked a turning point on how companies, banks, insurers, investors and regulators understand and respond to climate risk and opportunity. The PRI released a report with Baker McKenzie reviewing the recommendations in the context of seven countries, including the US. The analysis found that the TCFD's recommendations were consistent with the SEC's Regulation S-K and can provide helpful metrics and strategies for documenting climate-related financial risks.

Lastly, in March 2017, the New York Stock Exchange (NYSE) also affirmed its commitment to ESG disclosure, with the launch of a central repository of ESG reporting resources, including a range of tools to help companies understand ESG disclosure. Nasdaq OMX also released an ESG reporting guide for its Nordic and Baltic markets, which it has committed to modifying for the US market.

The PRI believes that recent developments around voluntary standards are a step in the right direction for stronger disclosure policies in the US.

FINANCIAL ACCOUNTING STANDARDS BOARD

In 2016, the Financial Accounting Standards Board (FASB), which sets accounting standards for public companies, released a proposal to update disclosure requirements. The proposal recommended including a disclosure requirement for disaggregated information on taxes.

The PRI wrote to FASB Technical Director, Susan Cosper, in support of these efforts. Our response included recommendations put forward by a PRI-convened investor taskforce on corporate tax responsibility to facilitate better understanding of tax-related risks and encourage dialogue with investee companies. The taskforce also contributed to the PRI's report, Engagement guidance on corporate tax responsibility: Why and how to engage with your investee companies.

STATE LEGISLATION

In early 2017, California state Senator Ben Allen (D-Santa Monica) introduced SB 560, the Climate Risk Bill, which would require state pension systems to consider "financial climate risk" within their funds. The bill would also mandate that the funds include risk assessments in their annual financial reports beginning in 2020.

California is home to CalPERs, the largest public pension fund in the country, and CalSTRS. Both pension funds are at the forefront of ESG integration. CalSTRS issued a statement opposing SB 560, stating it would like to see a number of changes to the bill, including changing the term financial "climate risk" to "climate-related financial risk." CalSTRS would also like clarification that the fund will only act in line with fiduciary responsibilities, and for the annual reporting requirement to be removed.

CONCLUSION

The PRI remains optimistic about the continued rise of responsible investment in the US. Despite the introduction of legislation in the US House of Representatives that could have serious implications for ESG issues, American investors continue to demand ESG integration to generate long-term growth. There has also been significant advancement in US policy in recent years – most notably the DOL's acknowledgement that when ESG issues contain financial value, they should be considered a core part of a fiduciary's investment analysis.

The PRI's Blueprint document, launched last year, focuses on our ESG priorities for the next decade. We are committed to collaborating with policy makers to address barriers to responsible investing. We will support investors in engaging federal and state law makers and regulators to further advance policies that not only support, but also encourage, ESG investing for long-term growth and value creation.

This briefing paper has been prepared for US and international signatories interested in US policy making on responsible investment and climate change. It is not intended to be exhaustive nor does it constitute legal advice. The paper was published in January 2018. For questions or comments, please email policy@unpri.org.

Prepared by Jenny Waits and Will Martindale.

The Principles for Responsible Investment (PRI)

The PRI works with its international network of signatories to put the six Principles for Responsible Investment into practice. Its goals are to understand the investment implications of environmental, social and governance (ESG) issues and to support signatories in integrating these issues into investment and ownership decisions. The PRI acts in the long-term interests of its signatories, of the financial markets and economies in which they operate and ultimately of the environment and society as a whole.

The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice. The Principles were developed by investors, for investors. In implementing them, signatories contribute to developing a more sustainable global financial system.

More information: www.unpri.org

The PRI is an investor initiative in partnership with UNEP Finance Initiative and the UN Global Compact.

United Nations Environment Programme Finance Initiative (UNEP FI)

UNEP FI is a unique partnership between the United Nations Environment Programme (UNEP) and the global financial sector. UNEP FI works closely with over 200 financial institutions that are signatories to the UNEP FI Statement on Sustainable Development, and a range of partner organisations, to develop and promote linkages between sustainability and financial performance. Through peer-to-peer networks, research and training, UNEP FI carries out its mission to identify, promote, and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

More information: www.unepfi.org

United Nations Global Compact

The United Nations Global Compact is a call to companies everywhere to align their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of UN goals and issues embodied in the Sustainable Development Goals. The UN Global Compact is a leadership platform for the development, implementation and disclosure of responsible corporate practices. Launched in 2000, it is the largest corporate sustainability initiative in the world, with more than 8,800 companies and 4,000 non-business signatories based in over 160 countries, and more than 80 Local Networks.

More information: www.unglobalcompact.org

https://www.unpri.org/about/sustainable-development-goals

Causeway

Causeway's Observations on Environmental, Social, Governance Investing and Ratings

Decades of investment experience have taught Causeway that the share prices of companies that take care to preserve the environment, maintain fair employment standards, and have an above average dedication to shareholders are generally benefitted by these policies. In the past five years, the global asset management industry has given these practices a new name and credence. As a result, we have devoted increased attention to developing a more systematic approach to analyzing the environmental, social, and governance ("ESG") practices of companies in which we seek to invest. Despite growing interest, ESG investing is still in its infancy. The approaches and standards among the data providers developing ratings, the investment managers offering ESG strategies, and the asset owners implementing their own objectives generally lack consistency. The ambiguity makes a thorough evaluation particularly important. We believe Causeway's capabilities spanning both quantitative and fundamental research provide us a unique advantage in evaluating data providers and implementation approaches. These capabilities have also allowed us, we believe, to improve the alpha potential of third-party ESG data by allocating more weight to those topics deemed most material to specific industries.

Investing with a consideration for the ESG practices of companies has been prevalent in Europe for some time. However, its popularity has grown over recent years in the United States and other parts of the world. The United Nations Principles for Responsible Investment (PRI) now has over 1,500 signatories (including Causeway as of September 2016) managing more than $60 trillion in assets.[1] The U.S. SIF Foundation separately estimates that $8.1 trillion invested under professional management in the U.S. apply various ESG criteria in their investment analysis and portfolio selection as of the beginning of 2016, a roughly 70% increase from the $4.8 trillion two years earlier. The $8.1 trillion also represents over 20% of assets managed professionally in the U.S.[2]

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[1] United Nations. "U.N. Principles for Responsible Investment (PRI) 2016 Annual Report," http://annualreport.unpri.org/PRI_AR-2016.pdf.
[2] U.S. SIF Foundation, "2016 Report on US Sustainable, Responsible and Impact Investing Trends," http://www.ussif.org/files/SIF_Trends_16_Executive_Summary(1).pdf.

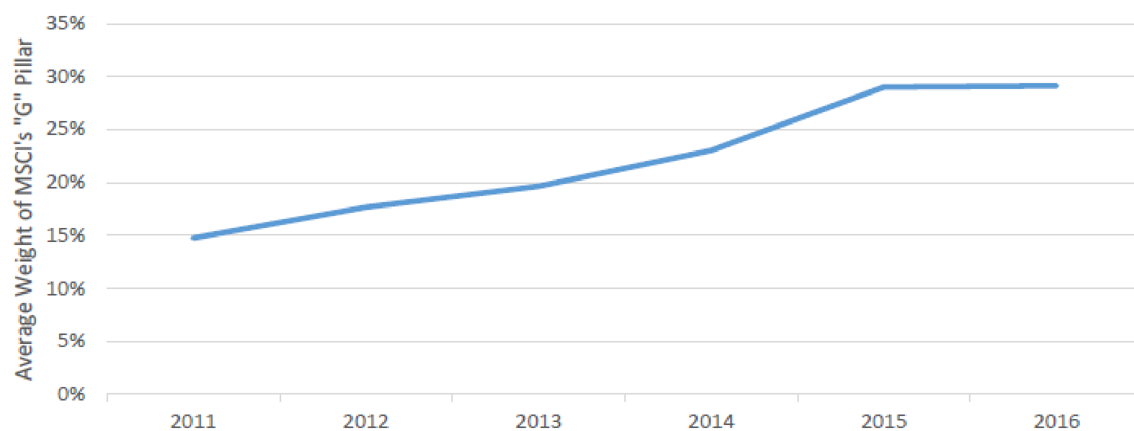
Causeway

The Alpha Potential of ESG

A returns or risk-based rationale raises the hurdle significantly because it requires stocks in an ESG portfolio to produce the same (or higher) shareholder returns, with potentially lower volatility, as the broader market. There are a number of reasons why, in theory, this should be possible. Most of them require that favorable ESG practices eventually positively impact a company's earnings or the variability of those earnings. There may be a wide variety of transmission mechanisms through which this can happen. From an environmental perspective, negative or positive externalities may eventually impact earnings through changes in regulation or a normalization of operating or capital expenditures. One obvious example was BP's Deepwater Horizon drilling rig in the Gulf of Mexico. A culture of aggressive cost savings (positive for short-term earnings) ultimately led to a well blowout that caused loss of life, environmental devastation, and a disaster for shareholders that far eclipsed the initial savings in operating costs and capital expenditures. From a social perspective, companies with exceptional human capital management may attract better talent, and companies with a keener focus on product liability may develop a reputation for higher-quality products and experience higher volumes and/or prices. From a governance perspective, companies with a greater emphasis on corporate behavior and investor relations may be rewarded by their shareholders with a superior valuation. In each of these examples, incorporating ESG practices into a stock selection process should, in theory, produce positive active returns or alpha.

MSCI has steadily increased the weight of governance within its composite ESG score.

Exhibit 2. MSCI's Governance ("G") Pillar Weight



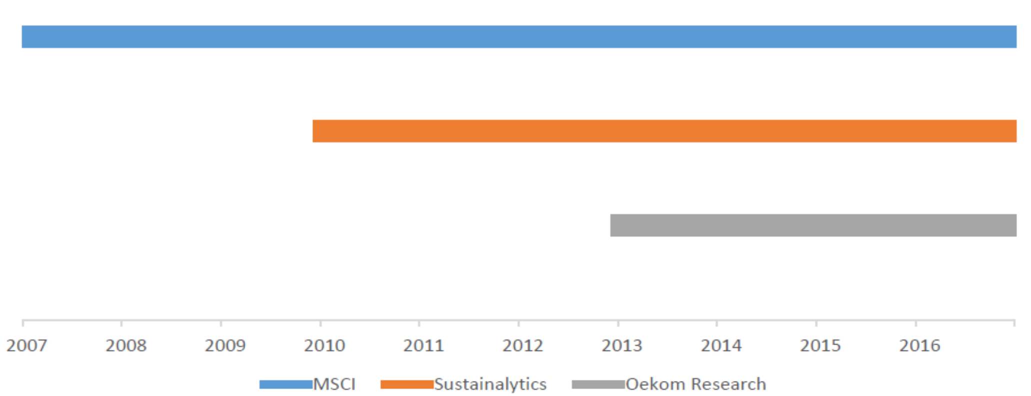
Note: G pillar weight is calculated as the index-weighted average of the MSCI World Index constituents' G pillar weights. Source: MSCI

Conclusion

Interest has surged in ESG investing, but this new movement has yet to offer objective and proven standards for measurement and implementation. Many studies have shown a positive relationship between corporate ESG practices and financial performance, but the literature linking ESG characteristics with stock price performance remains inconclusive. Although the data on ESG investing does not universally indicate superior returns compared to broader markets, we believe this may result from poorly conceived data collection and inappropriate ESG factor weighting schemes. Data choices and implementation methodologies undoubtedly impact the alpha opportunity of ESG factors, and we believe that a focus on materiality, in particular, is a critical component to a successful outcome. We suggest an integrated quantitative and fundamental approach to obtain the highest alpha potential from ESG investing.

The history of ESG data is relatively short among all major third-party vendors.

Exhibit 1. History of data availability



Note: Coverage measured in terms of number of constituents of MSCI World Index. Source: MSCI, Sustainalytics, Oekom Research

TFFR Investment Update

For the Periods Ended September 30, 2017 and November 30, 2017

January 18, 2018

Note: This document contains unaudited data which is deemed to be materially accurate, but is unaudited and subject to change.

Dave Hunter, Executive Director/CIO
Darren Schulz, Deputy Chief Investment Officer
ND Retirement & Investment Office (RIO)
State Investment Board (SIB)

Executive Summary for periods ended Sep. 30, 2017

Investment Performance Update –

- **For the 1-year period ended Sep. 30, 2017, TFFR earned a net return of 13% versus a policy benchmark of less than 12%.** The financial markets were incredibly robust and resilient over the last year. Global equities rose **19%** last year with TFFR's International Equity portfolio (up 20%) outperforming our U.S. Equity managers (up 17.5%). TFFR's fixed income returns far exceeded expectations with our U.S. debt portfolio posting a **5%** gain versus a **0.1%** return for the Aggregate Index. TFFR's international debt portfolio earned over **2%** in the last year and beat the global fixed income index which was **-2%** due to low "real" rates outside the U.S. Real Assets were mixed with Real Estate and Infrastructure each earning over 9% for the 1-year ended 9/30/18, while Timber declined over 9% this past year. **TFFR's target asset allocation remains at 58% Equity, 23% Fixed Income, 18% Real Assets and 1% Cash.**

- **Asset allocation is the primary driver of returns over the long-term. TFFR earned a net return of over 9% for the 5-years ended Sep. 30, 2017, which exceeded the policy benchmark of 8% by approximately 1%.** During the last 5-years, asset allocation and active management generated approximately **$900 million** (93%) and **$65 million**[1] (7%) of TFFR's net investment income, respectively.

- TFFR's investment returns were ranked in the **20th** percentile for the 5-years ended Sep. 30, 2017, based on Callan's Public Fund Sponsor Database on an unadjusted risk basis.

Investment Policy Statement Update (Board Action Requested) –

- **RIO is in the process of implementing standardized asset allocation guidelines for its SIB clients. These changes will not impact target allocations to Equity, Fixed Income or Real Assets which will remain at 58%, 23% and 18%, respectively.** <u>However, sector allocations within each broad asset class will be simplified into public or private for Equity, investment grade or non-investment grade for Fixed Income and real estate or other for Real Assets</u>. RIO notes that the TFFR (and PERS) boards approved these recommendations for Fixed Income late last year in connection with the fixed income restructuring.

Footnote 1: Assuming the market value of TFFR's assets were $2 billion for the five-years ended Sep. 30, 2017 ($2 billion x 0.65% = $13 million x 5 years = $65 million).

TFFR Investment Ends – Sep. 30, 2017

SIB clients should receive net investment returns consistent with their written investment policies and market variables. This "End" is evaluated based on comparison of each client's (a) actual net investment return, (b) standard deviation and (c) risk adjusted excess return, to the client's policy benchmark over 5 years.

TFFR earned $88 million of net investment income for the 3 months ended 9/30/17.

	Current FYTD 9/30/2017	1 Yr Ended 9/30/2017	3 Yrs Ended 9/30/2017	5 Yrs Ended 9/30/2017	Risk 5 Yrs Ended 9/30/2017	Risk Adj Excess Return 5 Yrs Ended 9/30/2017
Total Fund Return - Net	3.80%	13.05%	7.17%	9.05%	4.8%	0.57%
Policy Benchmark Return	3.10%	11.18%	6.23%	7.98%	4.5%	
Excess Return	0.70%	1.87%	0.94%	1.07%	106%	

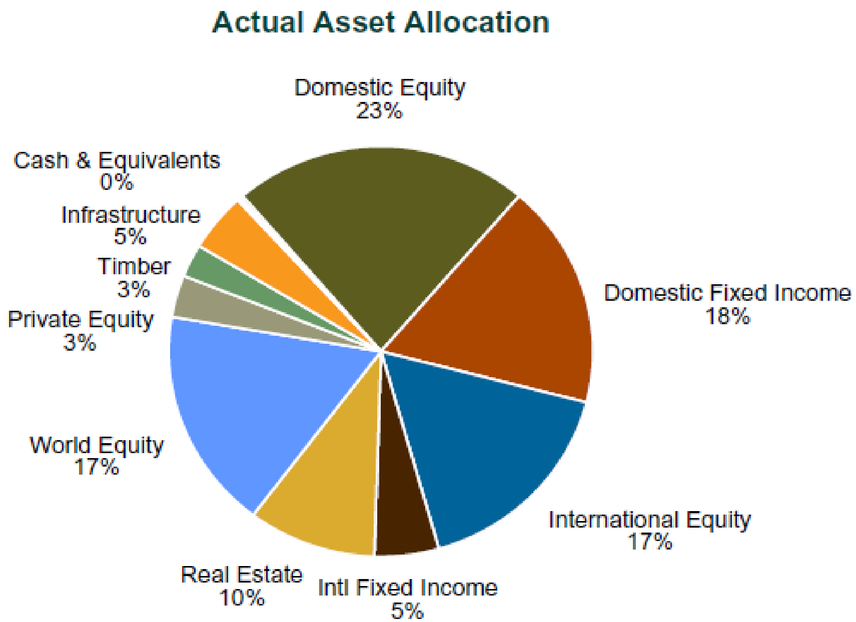
Key: TFFR investments averaged $2 billion the last 5-years and Excess Return has exceeded **0.65%** per annum. Based on these values, **TFFR's use of active management has enhanced Net Investment Returns by $50 million for the 5-years ended Sep. 30, 2017** (or $2 billion x **0.65%** = $13 million x 5 years = **$65 million**). **These returns were achieved while adhering to prescribed Risk limits (e.g. 106% vs. a 115% policy).**

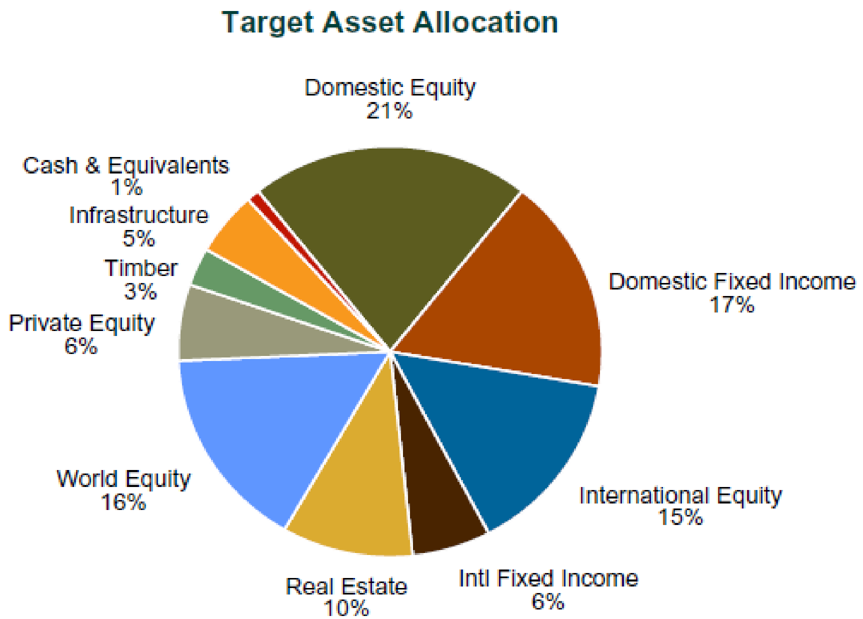
5-Yr. Returns Sep. 30, 2017	Asset Allocation	Benchmark Return	Allocation x Return
Asset Class	*a*	*b*	*a x b*
Equity	58%	10.4%	6.0%
Fixed Income	23%	3.2%	0.7%
Real Assets	18%	7.2%	1.3%
Policy Benchmark Return (5-years)			8.0%

Current Policy Benchmark: **58% Equity** (31% U.S., 21% Non-U.S., 6% Private); **23% Fixed Income** (13% U.S., 6% Non-U.S. 4% High Yield); **18% Real Assets** (10% Real Estate; 5% Infrastructure; 3% Timber); and **1% Cash.**

Actual Asset Allocations are within 3% of Target

The Private Equity Underweight of 2.7% is offset by Overweight allocations to Domestic Equity of 1.4%, Int'l. Equity of 2% and World Equity of 1.4%.





Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equity	545,147	22.8%	21.4%	1.4%	34,135
Domestic Fixed Income	422,116	17.7%	17.0%	0.7%	16,172
International Equity	395,334	16.6%	14.6%	2.0%	46,700
Intl Fixed Income	116,927	4.9%	6.0%	(1.1%)	(26,348)
Real Estate	232,988	9.8%	10.0%	(0.2%)	(5,803)
World Equity	414,609	17.4%	16.0%	1.4%	32,544
Private Equity	78,187	3.3%	6.0%	(2.7%)	(65,088)
Timber	61,130	2.6%	3.0%	(0.4%)	(10,508)
Infrastructure	109,809	4.6%	5.0%	(0.4%)	(9,586)
Cash & Equivalents	11,660	0.5%	1.0%	(0.5%)	(12,219)
Total	2,387,907	100.0%	100.0%		

Asset Class Performance

Periodic Table of Investment Returns
for Periods Ended September 30, 2017

Best → Worst

Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
MSCI:EM Gross 8.0%	MSCI:EM Gross 22.9%	Russell:2000 Index 12.2%	S&P:500 14.2%	Russell:2000 Index 7.8%	Russell:2000 Index 7.5%
Russell:2000 Index 5.7%	Russell:2000 Index 20.7%	S&P:500 10.8%	Russell:2000 Index 13.8%	S&P:500 7.4%	S&P:500 7.0%
MSCI:EAFE 5.4%	MSCI:EAFE 19.1%	MSCI:EM Gross 5.3%	MSCI:EAFE 8.4%	Blmbg:Aggregate 4.3%	MSCI:EM Gross 6.7%
S&P:500 4.5%	S&P:500 18.6%	MSCI:EAFE 5.0%	MSCI:EM Gross 4.4%	MSCI:EM Gross 1.7%	Blmbg:Aggregate 5.1%
Blmbg:Commodity Price Idx 2.2%	3 Month T-Bill 0.7%	Blmbg:Aggregate 2.7%	Blmbg:Aggregate 2.1%	MSCI:EAFE 1.3%	MSCI:EAFE 4.6%
Blmbg:Aggregate 0.8%	Blmbg:Aggregate 0.1%	3 Month T-Bill 0.3%	3 Month T-Bill 0.2%	3 Month T-Bill 0.5%	3 Month T-Bill 2.1%
3 Month T-Bill 0.3%	Blmbg:Commodity Price Idx (1.0%)	Blmbg:Commodity Price Idx (10.7%)	Blmbg:Commodity Price Idx (10.7%)	Blmbg:Commodity Price Idx (7.2%)	Blmbg:Commodity Price Idx (1.8%)

Emerging Markets (MSCI EM) and U.S. Small Cap (Russell 2000) returned over 20% for the 1-year ended Sep. 30, 2017, while International Equity (MSCI EAFE) and U.S. Large Cap (S&P 500) were up 19%. U.S. Fixed Income (Blmbg. Aggregate) was up 0.1% for the 1-year ended 9/30/17. Commodities have been the worst performing sector over the last 1-, 3-, 5-, 10- and 20-years.

Global Equity, Fixed Income and Real Asset Valuations

TFFR's investment income was $89.7 million last quarter while net outflows were $20 million.

	September 30, 2017				June 30, 2017	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
GLOBAL EQUITY	$1,433,277,296	60.02%	$2,161,158	$76,208,258	$1,354,907,880	58.45%
Domestic Equity	$545,147,073	22.83%	$(293,006)	$24,341,878	$521,098,201	22.48%
Large Cap	415,937,685	17.42%	(120,404)	18,259,571	397,798,517	17.16%
Small Cap	129,209,388	5.41%	(172,602)	6,082,307	123,299,684	5.32%
International Equity	$395,334,200	16.56%	$(172,945)	$27,237,185	$368,269,961	15.89%
Developed Intl Equity	307,248,285	12.87%	(172,945)	19,923,114	287,498,117	12.40%
Emerging Markets	88,085,915	3.69%	0	7,314,071	80,771,844	3.48%
World Equity	$414,609,208	17.36%	$(523,577)	$26,569,382	$388,563,403	16.76%
Private Equity	$78,186,815	3.27%	$3,150,686	$(1,940,187)	$76,976,315	3.32%
GLOBAL FIXED INCOME	$539,043,084	22.57%	$2,753,784	$10,141,972	$526,147,328	22.70%
Fixed Income Comp	$422,116,338	17.68%	$10,360,516	$6,749,001	$405,006,821	17.47%
Investment Grade Fixed	303,754,018	12.72%	(108,668)	4,918,529	298,944,157	12.90%
Below Inv. Grade Fixed Income	118,362,320	4.96%	10,469,184	1,830,472	106,062,664	4.58%
International Fixed Income	$116,926,746	4.90%	$(7,606,732)	$3,392,971	$121,140,506	5.23%
GLOBAL REAL ASSETS	$403,926,094	16.92%	$(9,234,417)	$3,255,914	$409,904,597	17.68%
Real Estate	232,987,574	9.76%	(8,318,151)	3,401,475	237,904,250	10.26%
Timber	61,129,515	2.56%	(480,299)	16	61,609,798	2.66%
Infrastructure	109,809,006	4.60%	(435,967)	(145,577)	110,390,549	4.76%
Cash & Equivalents	$11,660,110	0.49%	$(15,706,682)	$112,267	$27,254,525	1.18%
Securities Lending Income	$0	0.00%	$(49,853)	$49,853	-	-
Total Fund	$2,387,906,584	100.0%	$(20,076,010)	$89,768,265	$2,318,214,330	100.0%

Cash Outflows

Cash Inflows

Comparison of Major Asset Class Returns vs. Benchmark

Global Equities earned 19.1% for the 1-year ended Sep. 30, 2017, which was 1.4% above the benchmark, while the 5-year return of 11.3% surpassed the benchmark of 10.4% by 0.90%.

Global Fixed Income earned 4.5% last year and 4.1% the last 5-years due to strong returns in U.S. Fixed Income including high yield & private credit offset by weaker returns in International Debt and Long Term Treasuries due to rising rates.

Global Real Assets were mixed with Real Estate and Infrastructure earning over 9% versus Timber declining over 9% for the 1-year ended Sep. 30, 2017.

Every major asset class outperformed their respective benchmarks for the 5-years ended Sep. 30, 2017, with the largest excess return (of 1.8%) created within Global Fixed Income.

	Target Allocation	1-year	3-years	5-years
Global Equity	58%			
- Actual		19.1%	8.3%	11.3%
- Benchmark		17.7%	7.3%	10.4%
		1.4%	1.0%	0.9%
Global Fixed Income	23%			
- Actual		4.5%	4.0%	4.1%
- Benchmark		0.9%	2.7%	2.3%
		3.6%	1.4%	1.8%
Global Real Assets	18%			
- Actual		5.8%	7.3%	8.2%
- Benchmark		5.0%	6.5%	7.2%
		0.8%	0.8%	1.0%
Cash Equivalents	1%			
- Actual		0.9%	0.5%	0.3%
- Benchmark		0.7%	0.3%	0.2%
		0.3%	0.1%	0.1%
TFFR - Total Fund	100%			
- Actual		13.0%	7.2%	9.1%
- Benchmark		11.2%	6.2%	8.0%
		1.9%	0.9%	1.1%

TFFR's Global Equity returns outperformed its weighted average global equity benchmark largely as a result of strong performance within International Equity. U.S. Equity returns were generally in line with benchmarks after deducting fees, although U.S. Small Cap Equity has consistently struggled. World Equity returns have generally been in line with their benchmarks, although recent performance has improved the last three years. RIO intends to conduct a comprehensive review of our global equity portfolio in the next year. **In the interim, we are pleased to report that Public Equity returns consistently exceed benchmark on an overall basis and the Private Equity portfolio within the Pension Trust was restructured in recent years.**

Returns for Periods Ended September 30, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7-1/4 Years
Global Equity					
Gross	5.62%	19.35%	8.57%	11.59%	-
Net	5.54%	19.09%	8.29%	11.26%	-
Wtd Avg Global Equity Benchmark	4.35%	17.70%	7.29%	10.35%	-
Domestic Equity					
Gross	4.67%	17.77%	11.03%	14.74%	15.60%
Net	4.62%	17.57%	10.84%	14.54%	15.35%
Wtd Avg Domestic Equity Benchmark	4.76%	19.13%	11.05%	14.23%	15.39%
Large Cap Equity					
Gross	4.59%	17.30%	11.21%	15.08%	15.87%
Net	4.56%	17.18%	11.07%	14.91%	15.63%
Benchmark(1)	4.48%	18.54%	10.63%	14.27%	15.55%
Small Cap Equity					
Gross	4.94%	19.33%	10.28%	13.38%	14.57%
Net	4.79%	18.88%	9.96%	13.07%	14.27%
Russell 2000 Index	5.67%	20.74%	12.18%	13.79%	14.69%
International Equity					
Gross	7.40%	20.65%	7.45%	9.71%	9.34%
Net	7.35%	20.44%	7.25%	9.46%	9.03%
Wtd Avg Intl Equity Benchmark	6.07%	19.49%	4.97%	7.52%	7.12%
Developed Intl Equity					
Gross	6.93%	20.33%	7.42%	10.53%	9.80%
Net	6.87%	20.07%	7.17%	10.26%	9.48%
Benchmark(2)	5.62%	18.73%	4.88%	8.28%	7.55%
Emerging Markets					
Gross	9.06%	21.74%	6.90%	5.58%	6.97%
Net	9.06%	21.74%	6.90%	5.41%	6.68%
Benchmark(3)	7.89%	22.46%	4.90%	3.99%	4.87%
World Equity					
Gross	6.84%	22.89%	8.68%	11.66%	-
Net	6.70%	22.43%	8.13%	10.97%	-
MSCI World Index	4.84%	18.17%	7.69%	10.99%	11.69%
Private Equity					
Net	(2.48%)	6.54%	(2.15%)	0.88%	3.36%

Global Fixed Income returns have consistently beat expectations in both the U.S. and International markets, although absolute returns in the U.S. often exceeded International returns by 2% or 3% (e.g. 6.08% versus 3.84% over the last 7.25 years).

Global Real Asset returns have also consistently beat expectations, although performance has been mixed. Real Estate and Infrastructure earned 12.47% and 5.93%, respectively, the last 5-years, while Timber returns disappointed at only 0.27% per annum for the 5-years ended September 30, 2017.

Returns for Periods Ended September 30, 2017

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7-1/4 Years
Global Fixed Income					
Gross	1.92%	4.72%	4.30%	4.36%	-
Net	1.86%	4.48%	4.04%	4.11%	-
Wtd Avg Global Fixed Inc. Benchmark	1.47%	0.93%	2.67%	2.29%	-
Domestic Fixed Income					
Gross	1.66%	5.53%	5.02%	5.30%	6.22%
Net	1.61%	5.32%	4.80%	5.09%	6.08%
Wtd Avg Domestic FI Benchmark	1.12%	2.09%	3.41%	3.19%	4.57%
Inv. Grade Fixed Income					
Gross	1.65%	3.88%	4.50%	4.39%	5.16%
Net	1.61%	3.75%	4.36%	4.27%	5.00%
Blmbg Aggregate Index	0.85%	0.07%	2.71%	2.06%	3.20%
Below Inv. Grade Fixed Income					
Gross	1.71%	10.16%	6.52%	7.70%	9.13%
Net	1.61%	9.74%	6.09%	7.25%	8.69%
Blmbg HY Corp 2% Issue	1.98%	8.87%	5.84%	6.37%	8.14%
International Fixed Income					
Gross	2.80%	2.48%	1.81%	1.15%	4.21%
Net	2.71%	2.11%	1.42%	0.79%	3.84%
Wtd Avg Intl Fixed Income Benchmark	2.48%	(2.42%)	0.20%	(0.73%)	2.04%
Global Real Assets					
Gross	0.81%	6.23%	7.72%	8.62%	-
Net	0.75%	5.81%	7.27%	8.19%	-
Wtd Avg Global Real Assets Benchmark	1.29%	5.00%	6.49%	7.22%	-
Real Estate					
Gross	1.48%	9.64%	12.37%	13.01%	14.30%
Net	1.36%	9.12%	11.78%	12.47%	13.74%
NCREIF Total Index	1.70%	6.89%	9.83%	10.35%	11.42%
Timber					
Net	0.00%	(9.44%)	(0.60%)	0.27%	-
NCREIF Timberland Index	0.60%	3.28%	5.24%	7.13%	5.21%
Infrastructure					
Gross	(0.13%)	9.75%	3.63%	6.54%	-
Net	(0.12%)	9.25%	3.08%	5.93%	-
CPI-W	0.89%	2.31%	0.95%	1.09%	1.66%
Cash & Equivalents - Net	**0.30%**	**0.92%**	**0.46%**	**0.30%**	**0.24%**
3-month Treasury Bill	0.26%	0.66%	0.32%	0.22%	0.19%
Total Fund					
Gross	3.87%	13.33%	7.47%	9.37%	10.19%
Net	3.80%	13.04%	7.17%	9.05%	9.84%
Target*	3.10%	11.18%	6.23%	7.98%	8.96%

TFFR Long Term Results are Near Long-Term Assumptions

Investment Performance (net of fees)

	Quarter Ended	Fiscal Years ended June 30					Periods ended 6/30/17 (annualized)						
	9/30/17	2017	2016	2015	2014	2013	3 Years	**5 Years**	10 Years	15 Years	20 Years	25 Years	**30 Years**
TFFR	3.02%	12.93%	0.28%	3.52%	16.53%	13.57%	5.44%	**9.18%**	3.81%	7.03%	6.19%	7.47%	**7.84%**

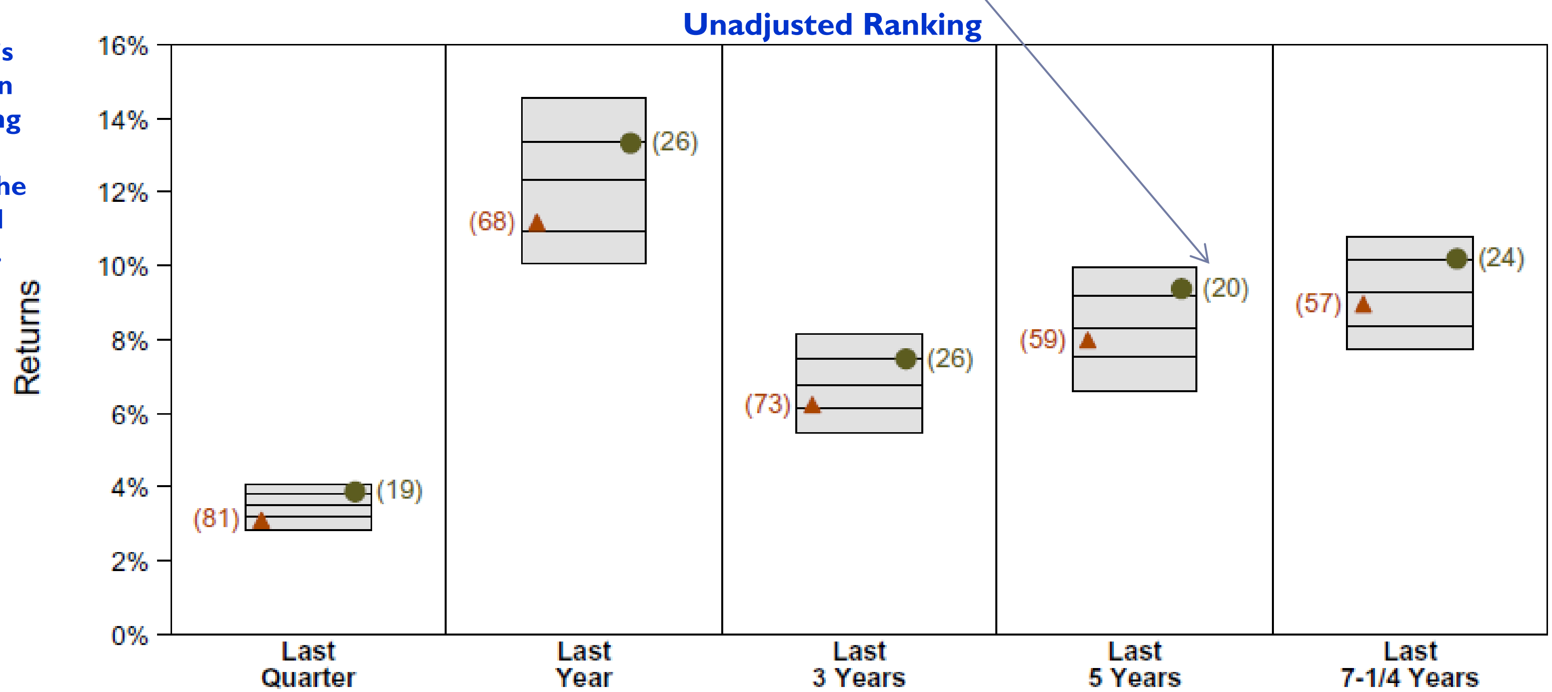
The TFFR Pension Plan is a Long Term Investor

Net investment returns for the TFFR Pension Plan have approximated 7.84% for the last 30-years which is materially consistent with the plan's long term actuarial assumption of 7.75%.

TFFR's "gross" returns were ranked in the 20th percentile for the 5-years ended Sep. 30, 2017, based on Callan's "Public Fund Sponsor Database".

Callan Public Fund Sponsor Database

NOTE: TFFR's asset allocation adjusted ranking is in the 10th percentile for the 5-years ended Sep. 30, 2017.

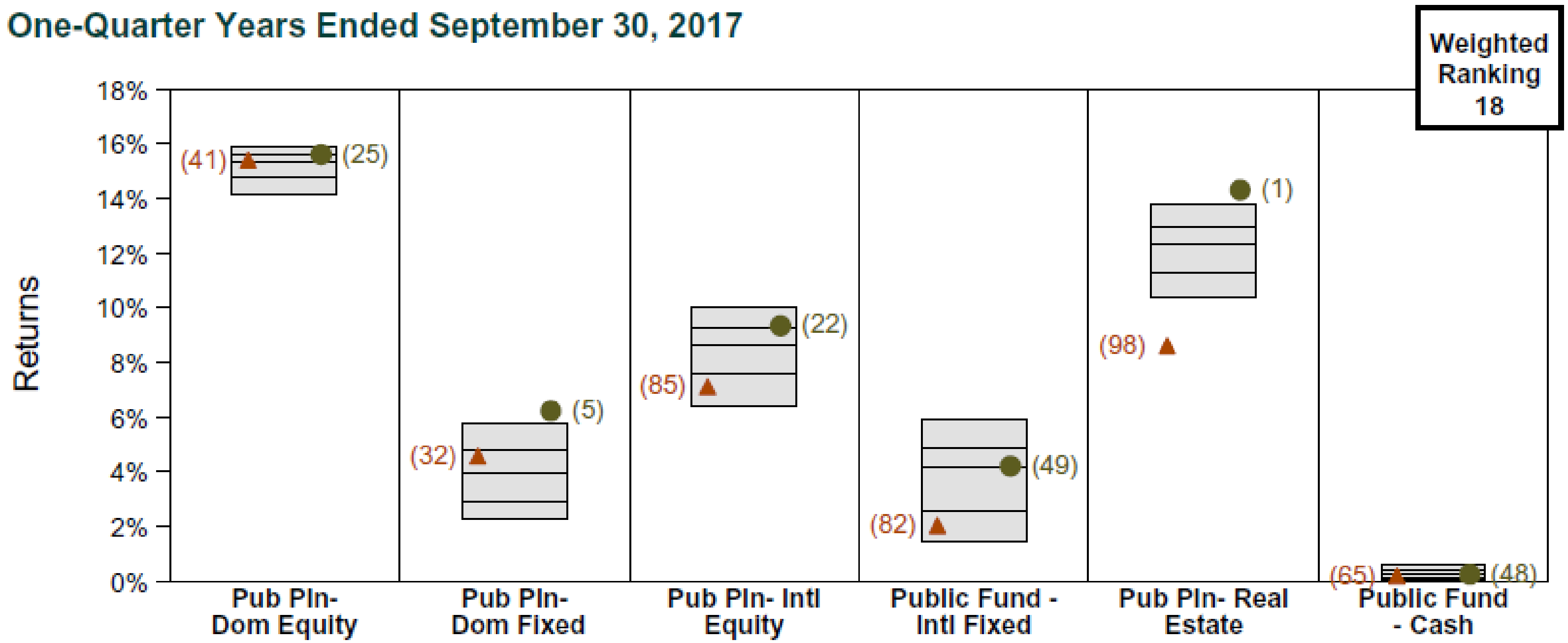


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7-1/4 Years
10th Percentile	4.07	14.55	8.13	9.96	10.76
25th Percentile	3.79	13.38	7.49	9.16	10.18
Median	3.48	12.33	6.76	8.30	9.26
75th Percentile	3.19	10.94	6.14	7.51	8.36
90th Percentile	2.84	10.08	5.47	6.59	7.74
Total Fund ●	3.87	13.33	7.47	9.37	10.19
Policy Target ▲	3.10	11.18	6.23	7.98	8.96

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% MSCI World, 13.0% Blmbg Aggregate, 11.8% MSCI World ex US, 10.0% NCREIF Total Index, 6.0% Blmbg Glob Agg ex USD, 6.0% NDSIB TFFR - Private Equity, 5.0% CPI-W, 4.8% Russell 2000 Index, 4.0% Blmbg HY 2% Iss Cap, 3.0% NCREIF Timberland Index, 2.8% MSCI EM and 1.0% 3-month Treasury Bill.

TFFR managers performed well in the public markets over the last 7 years, but have been challenged in private equity and timber.

Total Asset Class Performance
Seven and One-Quarter Years Ended September 30, 2017



	Pub Pln- Dom Equity	Pub Pln- Dom Fixed	Pub Pln- Intl Equity	Public Fund - Intl Fixed	Pub Pln- Real Estate	Public Fund - Cash
10th Percentile	15.85	5.75	9.99	5.92	13.79	0.59
25th Percentile	15.60	4.78	9.25	4.86	12.95	0.43
Median	15.30	3.94	8.62	4.18	12.31	0.24
75th Percentile	14.77	2.92	7.59	2.56	11.26	0.12
90th Percentile	14.11	2.26	6.41	1.43	10.38	0.03
Asset Class Composite ●	15.60	6.22	9.34	4.21	14.30	0.24
Composite Benchmark ▲	15.39	4.57	7.12	2.04	8.61	0.19

NOTE: SIB utilizes the private markets to invest in real estate, infrastructure and timber (in addition to private equity and private debt).

NDSIB Watch List

At December 31, 2017

JP Morgan MBS (Pen.)		$132,337,114	
	Returns	Index[1]	Excess
1 Year	3.04	2.47	0.57
3 Year	2.43	1.88	0.54
Inception*	2.64	2.29	0.34

*Funded 09/30/2014

[1] Bloomberg Mortgage Index

UBS International Fixed (Pen.)		$94,812,889	
	Returns	Index[2]	Excess
1 Year	9.99	10.51	(0.53)
3 Year	1.64	1.77	(0.13)
Inception*	5.95	5.69	0.26

*Funded 07/01/1989

[2] Bloomberg Global Aggregate ex-US

Note: Return data is gross of fee due to data availability

UPDATE:

In connection with the Fixed Income restructuring being implemented within the Pension Trust, RIO notes the JPMorgan MBS (Mortgage Backed Securities) strategy and the UBS International Fixed Income strategy are in the process of being transitioned into other approved debt strategies. As such, the NDSIB Watch List may not include any investment mandates when refreshed in the upcoming quarter.

PIMCO was removed from Watch on August 25, 2017, after RIO conducted extensive onsite due diligence during the past six months. PIMCO was originally placed on Watch in September of 2014 following the resignation of former CIO and co-founder Bill Gross. Recent staff meetings with PIMCO's current CEO Emmanuel Roman and Group CIO Dan Ivascyn confirm RIO's belief that PIMCO has successfully emerged from the post-Bill Gross era noting that firm level assets have stabilized at $1.6 trillion. Callan concurs with these watch list recommendations and was instrumental in providing valuable market insight and investment research.

TFFR's estimated net investment returns for the six months ended Dec. 31, 2017, are approximately 7.3%.

TFFR Investment Policy Statement Review – Jan. 25, 2018

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS.

The North Dakota Teachers' Fund for Retirement (TFFR) is a pension benefit plan that was established in 1913 to provide retirement income to all public school and certain state teachers and administrators in the state of North Dakota. The plan is administered by a seven member Board of Trustees comprised of five active and retired members of the fund appointed by the Governor of North Dakota and two elected officials - the State Treasurer and the State Superintendent of Public Instruction.

The plan is a multi-employer defined benefit public pension plan that provides retirement, disability, and death benefits in accordance with Chapter 15-39.1 of the North Dakota Century Code (NDCC). Monthly retirement benefits are based on the formula: Number of Years of service X 2.0% X Final Average Salary. Adjustments to the basic formula are made depending on the retirement option selected.

Funding is provided by monthly employee and employer contributions scheduled to increase as follows:

	7/1/11	7/1/12	7/1/14
Employee	**7.75%**	**9.75%**	**11.75%**
Employer	**8.75%**	**10.75%**	**12.75%**

Employee and employer contributions will be reduced to 7.75% each when TFFR reaches 100% funded level on an actuarial value basis.

The TFFR Board has an actuarial valuation performed annually and an Experience Study and Asset Liability Study performed every five years. The actuarial assumed rate of return on assets was reduced to 7.75% from 8.0% as of July 1, 2015. Key plan and financial statistics are recorded in the most recent valuation report on file at the North Dakota Retirement and Investment office (RIO).

2. FUND GOALS

The Plan benefits are financed through both statutory employer and employee contributions and the investment earnings on assets held in the Fund. The TFFR Board recognizes that a sound investment program is essential to meet the pension obligations.

As a result, the Fund goals are to:

- Improve the Plan's funding status to protect and sustain current and future benefits.
- Minimize the employee and employer contributions needed to fund the Plan over the long term.
- Avoid substantial volatility in required contribution rates and fluctuations in the Plan's funding status.
- Accumulate a funding surplus to provide increases in retiree annuity payments to preserve the purchasing power of their retirement benefit.

The Board acknowledges the material impact that funding the pension plan has on the State/School District's financial performance. These goals affect the Fund 's investment strategies and of ten represent conflicting goals. For example, minimizing the long-term funding costs implies a less conservative investment program, whereas dampening the volatility of contributions and avoiding large swings in the funding status implies a more conservative investment program. The Board places a greater emphasis on the strategy of improving the funding status and reducing the contributions that must be made to the Fund, as it is most consistent with the long-term goal of conserving money to apply to other important state/local projects.

There are no changes proposed for this page.

TFFR Investment Policy Statement Review - Jan. 25, 2017

3. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD (SIB).

The TFFR Board is charged by law under NDCC 21-10-02.1 with the responsibility of establishing policies on investment goals and asset allocation of the Fund. The SIB is charged with implementing these policies and investing the assets of the Fund in the manner provided in NDCC 21-10-07, the prudent investor rule. Under this rule, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income. The Fund must be invested exclusively for the benefit of the members and their beneficiaries in accordance with this investment policy.

Management responsibility for the investment program not assigned to the SIB in Chapter 21-10 of the North Dakota Century Code (NDCC) is hereby delegated to the SIB, who must establish written policies for the operation of the investment program, consistent with this investment policy.

The SIB may delegate investment responsibility to professional money managers. Where a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory, not advisory.

At the discretion of the SIB, the Fund's assets may be pooled with other funds. In pooling funds, the SIB may establish whatever asset class pools it deems necessary with specific quality, diversification, restrictions, and performance objectives appropriate to the prudent investor rule and the objectives of the funds participating in the pools.

The SIB is responsible for establishing criteria, procedures, and making decisions with respect to hiring, keeping, and terminating money managers. SIB investment responsibility also includes selecting performance measurement services, consultants, report formats, and frequency of meetings with managers.

The SIB will implement changes to this policy as promptly as is prudent.

4. RISK TOLERANCE

The Board is unwilling to undertake investment strategies that might jeopardize the ability of the Fund to finance the pension benefits promised to plan participants.

However, funding the pension promise in an economical manner is critical to the State/School Districts ability to continue to provide pension benefits to plan participants. Thus, the Board actively seeks to lower the cost of funding the Plan's pension obligations by taking on risk for which it expects to be compensated over the long term. The Board understands that a prudent investment approach to risk taking can result in periods of under-performance for the Fund in which the funding status may decline. These periods, in turn, can lead to higher required contribution rates. Nevertheless, the Board believes that such an approach, prudently implemented, best serves the long-run interests of the State/School District and, therefore, of plan participants.

5. INVESTMENT OBJECTIVES

The Board's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The Fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB

1) The fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.
2) The fund's risk, measured by the standard deviation of net returns, should not exceed 115% of the policy benchmark over a minimum evaluation period of five years.
3) The risk adjusted performance of the fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

There are no changes proposed for this page.

Board Action Requested

TFFR Investment Policy Statement Review – Jan. 25, 2018

6. POLICY ASSET MIX

Benefit payments are projected to occur over a long period of time. This allows TFFR to adopt a long-term investment horizon and asset allocation policy for the management of fund assets. Asset allocation policy is critical because it defines the basic risk and return characteristics of the investment portfolio. Asset allocation targets are established using an asset-liability analysis designed to assist the Board in determining an acceptable volatility target for the fund and an optimal asset allocation policy mix. This asset-liability analysis considers both sides of the plan balance sheet, utilizing both quantitative and qualitative inputs, in order to estimate the potential impact of various asset class mixes on key measures of total plan risk, including the resulting estimated impact of funded status and contribution rates. After consideration of all the inputs and a discussion of its own collective risk tolerance, the Board approves the appropriate policy asset mix for the Fund.

Asset Class	Policy Target (%)	~~Rebalancing Range (%)~~
Global Equity	58	~~46-65~~
Public Equity	52	~~44-60~~
~~U.S.~~	~~29~~	~~23-35~~
~~Global ex-U.S.~~	~~23~~	~~18-28~~
Private Equity	6	~~4-8~~
Global Fixed Income	23	~~16-30~~
Investment Grade	16	~~11-21~~
Non-Investment Grade	7	~~5-9~~
Global Real Assets	18	~~12-24~~
Global Real Estate	10	~~5-15~~
Other	8	~~0-12~~
~~Infrastructure~~		~~0-10~~
~~Timber~~		~~0-5~~
~~Commodities~~		~~0-5~~
~~Inflation Linked Bonds~~		~~0-10~~
~~Other Inflation Sensitive Strategies~~		~~0-5~~
~~Global Alternatives~~		~~0-10~~
Cash	1	~~0-2~~

TFFR's Total "Global Equity" allocation of 58% remains constant, but "U.S." vs. "Global ex-U.S." allocations are eliminated.

TFFR's "Global Fixed Income" and "Global Real Assets" allocations remain constant at 23% and 18% respectively, including sector allocations to "Investment Grade" and "Non-Investment Grade" (for Fixed Income) and "Real Estate" and "Other" (for Real Assets), but the "Rebalancing Range %'s" are eliminated for all Asset Classes.

RIO requests TFFR to approve the elimination of specific target allocations to "U.S." and "Global ex-U.S." public equity and specific "Rebalancing Ranges" for each asset class in order to improve operational flexibility, while minimizing administrative burden, in the oversight of TFFR's portfolio. This recommendation is not expected to materially increase or decrease the fund's expected return or risk profile, although it should reduce an administrative burden on RIO staff if adopted by all clients in the Pension Trust.

All recommended changes are highlighted in red on this page.

TFFR Investment Policy Statement Review – Jan. 25, 2018

An allocation to Global Alternatives of up to 10% is authorized but shall not increase the expected volatility of the portfolio as measured in Section 5; and if utilized, all other targets will be adjusted pro-rata. The Board does not endorse tactical asset allocation, therefore, it is anticipated the portfolio be managed as close to the policy target as is prudent and practicable while minimizing rebalancing costs. Rebalancing of the Fund to this target will be done in accordance with the SIB's rebalancing policy. ~~While the Board recognizes fluctuations in market values will lead to short-term deviations from policy targets, the Board does not intend to engage in tactical asset allocation. Allocations to Global Alternatives will result in pro-rata reduction in the policy targets.~~

7. RESTRICTIONS

While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the Fund's assets will be invested, it is understood that:

a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
b. Derivative use will be monitored to ensure that undue risks are not taken by the money managers
c. No transaction shall be made which threatens the tax exempt status of the Fund.
d. All assets will be held in custody by the SIB's master custodian or such other custodians as are acceptable to the SIB.
e. No unhedged short sales or speculative margin purchases shall be made.
f. Social investing is prohibited unless it meets the Exclusive Benefit Rule and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.

> For the purpose of this document, Social Investing is defined as *"The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries."*

g. Economically targeted investing is prohibited unless the investment meets the Exclusive Benefit Rule.

> For the purpose of this document economically targeted investment is defined as an investment designed to produce a competitive rate of return commensurate with risk involved, as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy.

Also, for the purpose of this document, the Exclusive Benefit Rule is met if the following four conditions are satisfied:

1) The cost does not exceed the fair market value at the time of investment.
2) The investment provides the Fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar task.
3) Sufficient liquidity is maintained in the Fund to permit distributions in accordance with the terms of the plan.
4) The safeguards and diversity that a prudent investor would adhere to are present.

Where investment characteristics, including yield, risk, and liquidity are equivalent, the Board's policy favors investments which will have a positive impact on the economy of North Dakota.

There are no changes proposed for this page.

TFFR Investment Policy Statement Review – Jan. 25, 2018

8. INTERNAL CONTROLS

A system of internal controls must be in place by the SIB to prevent losses of public funds arising from fraud or employee error. Such controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for broker relationships. The annual financial audit must include a comprehensive review of the portfolio, accounting procedures for security transactions and compliance with the investment policy.

9. EVALUATION AND REVIEW

Investment management of the Fund will be evaluated against the Fund's investment objectives. Emphasis will be placed on five year results. Evaluation should include an assessment of the continued feasibility of achieving the investment objectives and the appropriateness of the Investment Policy Statement for achieving those objectives.

Performance reports will be provided to the TFFR Board periodically, but not less than annually. Such reports will include asset returns and allocation data as well as information regarding all significant and/or material matters and changes pertaining to the investment of the Fund, including but not limited to:

1) A list of the advisory services managing investments for the board.
2) A list of investments at market value, compared to previous reporting period, of each fund managed by each advisory service.
3) Earnings, percentage earned, and change in market value of each fund's investments.
4) Comparison of the performance of each fund managed by each advisory service to other funds under the board's control and to generally accepted market indicators.
5) All material legal or legislative proceedings affecting the SIB.
6) Compliance with this investment policy statement.

TFFR Board Adopted: May 25, 1995.

Amended: November 30, 1995; August 21, 1997; July 15, 1999; July 27, 2000; September 18, 2003; July 14, 2005; September 21, 2006; September 20, 2007; October 27, 2011; September 26, 2013; January 21, 2016; September 21, 2017, January 25, 2018

Approved by SIB: November 18, 2011, February 26, 2016, September 22, 2017, January 26, 2018

ND Teachers' Fund For Retirement

Date:_______________________________

ND State Investment Board

Date:_______________________________

There are no material changes proposed for this page.

Appendix of Supporting Materials

TFFR Update as of September 30, 2017

Callan's Quarterly Reports of investment performance are available on the following web address:
http://www.nd.gov/rio/SIB/Board/SIB%20Meeting%20Materials/2017-08-25.pdf

Board members can review monthly manager level performance using the following web address:
http://www.nd.gov/rio/RIO_ref/performance/TFFR/201706.pdf

SYSTEMATIC REBALANCING

At least quarterly, all portfolios will be evaluated to determine if the actual percentage of assets within the broad asset classes are in compliance with the asset allocation plan. Broad asset classes in which the percentage of assets deviate by more than the established range around the target shall be rebalanced back within the range. Unless specifically indicated in the Investment Policy Statement, ranges around a target allocation are as follows:

Target allocation of less than 10%	+\- 25% of the target
Target allocation of 10% or greater but less than 20%	+\- 18.75% of the target
Target allocation of 20% or greater	+\- 12.5% of the target

ND TEACHERS FUND FOR RETIREMENT
INVESTMENT PERFORMANCE REPORT AS OF SEPTEMBER 30, 2017

	September-17					Current Fiscal YTD		Prior Year FY17		3 Years Ended 6/30/2017		5 Years Ended 6/30/2017	
		Allocation		Quarter									
	Market Value	Actual	Policy	Gross [4]	Net	Gross [4]	Net	Gross [4]	Net	Gross [4]	Net	Gross [4]	Net
TOTAL FUND	**2,387,906,588**	**100.0%**	**100.0%**	**3.87%**	**3.80%**	**3.87%**	**3.80%**	**13.22%**	**12.92%**	**5.76%**	**5.44%**	**9.51%**	**9.18%**
POLICY TARGET BENCHMARK				*3.10%*	*3.10%*	*3.10%*	*3.10%*	*11.63%*	*11.63%*	*4.69%*	*4.69%*	*8.25%*	*8.25%*
ATTRIBUTION ANALYSIS													
Asset Allocation				**0.22%**	**0.22%**	**0.22%**	**0.22%**	**0.27%**	**0.27%**	**0.04%**	**0.04%**	**0.09%**	**0.09%**
Manager Selection				**0.54%**	**0.47%**	**0.55%**	**0.48%**	**1.33%**	**1.02%**	**1.03%**	**0.71%**	**1.18%**	**0.84%**
TOTAL RELATIVE RETURN				0.77%	0.70%	0.77%	0.70%	1.60%	1.29%	1.08%	0.75%	1.26%	0.93%
GLOBAL EQUITIES	***1,433,277,300***	***60.0%***	***58.0%***	***5.62%***	***5.54%***	***5.62%***	***5.54%***	***19.10%***	***18.81%***	***5.92%***	***5.60%***	***11.65%***	***11.30%***
Benchmark			***52.0%***	***4.35%***	***4.35%***	***4.35%***	***4.35%***	***18.58%***	***18.58%***	***5.04%***	***5.04%***	***10.80%***	***10.80%***
Epoch Global Choice (1)	184,888,834	7.7%	7.0%	7.07%	6.90%	7.07%	6.90%	17.71%	16.96%	6.33%	5.65%	11.43%	10.71%
LSV Global Value Equity	229,720,374	9.6%	9.0%	6.66%	6.54%	6.66%	6.54%	23.50%	23.29%	5.38%	4.70%	N/A	N/A
Total Global Equities	**414,609,208**	**17.4%**	**16.0%**	**6.84%**	**6.70%**	**6.84%**	**6.70%**	**21.01%**	**20.57%**	**5.79%**	**5.10%**	**11.30%**	**10.62%**
MSCI World				***4.84%***	***4.84%***	***4.84%***	***4.84%***	***18.20%***	***18.20%***	***5.24%***	***5.24%***	***11.38%***	***11.38%***
Domestic - broad	***545,147,076***	***22.8%***	***21.5%***	***4.67%***	***4.62%***	***4.67%***	***4.62%***	***17.35%***	***17.07%***	***9.16%***	***8.97%***	***15.10%***	***14.85%***
Benchmark				***4.76%***	***4.76%***	***4.76%***	***4.76%***	***19.56%***	***19.56%***	***8.90%***	***8.90%***	***14.51%***	***14.51%***
Large Cap Domestic													
LA Capital Large Cap Growth	158,805,838	6.7%	6.6%	4.81%	4.76%	4.81%	4.76%	15.90%	15.66%	11.18%	10.95%	15.50%	15.27%
Russell 1000 Growth				***5.90%***	***5.90%***	***5.90%***	***5.90%***	***20.42%***	***20.42%***	***11.11%***	***11.11%***	***15.30%***	***15.30%***
LA Capital 60% Large Cap/40% Large Cap Active Extension	91,664,777	3.8%	3.3%	4.05%	4.02%	4.05%	4.02%	15.56%	15.44%	9.88%	9.75%	14.96%	14.81%
Russell 1000				***4.48%***	***4.48%***	***4.48%***	***4.48%***	***18.03%***	***18.03%***	***9.26%***	***9.26%***	***14.67%***	***14.67%***
NTAM - Quant Enhanced S&P 500	77,179,480	3.2%	3.3%	4.92%	4.92%	4.92%	4.92%	16.51%	16.51%	8.00%	7.88%	14.59%	14.28%
Clifton Group Enhanced S&P 500	88,287,593	3.7%	3.3%	4.47%	4.45%	4.47%	4.45%	17.97%	17.72%	9.85%	9.77%	14.76%	14.70%
S&P 500				***4.48%***	***4.48%***	***4.48%***	***4.48%***	***17.90%***	***17.90%***	***9.61%***	***9.61%***	***14.63%***	***14.63%***
Total Large Cap Domestic	**415,937,688**	**17.4%**	**16.6%**	**4.59%**	**4.56%**	**4.59%**	**4.56%**	**16.36%**	**16.20%**	**10.05%**	**9.90%**	**15.49%**	**15.31%**
Russell 1000 (2)				***4.48%***	***4.48%***	***4.48%***	***4.48%***	***18.03%***	***18.03%***	***9.26%***	***9.26%***	***14.67%***	***14.67%***
Small Cap Domestic													
Atlanta Capital Small Cap Equity Fund	57,455,274	2.4%	2.4%	3.53%	3.35%	3.53%	3.35%	15.83%	14.98%	N/A	N/A	N/A	N/A
Clifton Group Enhanced Russell 2000	71,754,114	3.0%	2.4%	6.09%	5.98%	6.09%	5.98%	24.97%	24.44%	8.31%	7.89%	14.75%	14.25%
Total Small Cap Domestic	**129,209,388**	**5.4%**	**4.8%**	**4.94%**	**4.79%**	**4.94%**	**4.79%**	**20.74%**	**20.08%**	**5.95%**	**5.62%**	**13.56%**	**13.09%**
Russell 2000				***5.67%***	***5.67%***	***5.67%***	***5.67%***	***24.60%***	***24.60%***	***7.36%***	***7.36%***	***13.70%***	***13.70%***
International - broad	***395,334,200***	***16.6%***	***14.5%***	***7.40%***	***7.35%***	***7.40%***	***7.35%***	***21.37%***	***21.17%***	***2.94%***	***2.74%***	***9.70%***	***9.36%***
Benchmark				***6.07%***	***6.07%***	***6.07%***	***6.07%***	***20.33%***	***20.33%***	***1.04%***	***1.04%***	***7.74%***	***7.74%***
Developed International													
NTAM - MSCI World ex-US Index	144,630,683	6.1%	5.9%	5.69%	5.67%	5.69%	5.67%	19.94%	19.92%	1.04%	1.01%	N/A	N/A
MSCI World Ex US				***5.62%***	***5.62%***	***5.62%***	***5.62%***	***19.49%***	***19.49%***	***0.67%***	***0.67%***		
William Blair International Leaders	71,506,474	3.0%	3.5%	7.70%	7.61%	7.70%	7.61%	20.15%	19.77%	N/A	N/A	N/A	N/A
MSCI ACWI ex-US IMI (Net)				***6.27%***	***6.27%***	***6.27%***	***6.27%***	***20.43%***	***20.43%***				
DFA Intl. Small Cap Value Portfolio (4)	42,864,136	1.8%	1.2%	7.60%	7.60%	7.60%	7.60%	28.80%	28.80%	4.16%	4.16%	14.04%	13.77%
Wellington International Small Cap Opportunities	48,246,993	2.0%	1.2%	9.02%	8.81%	9.02%	8.81%	20.62%	19.62%	7.31%	6.42%	15.04%	14.12%
S&P/Citigroup BMI EPAC < $2BN				***5.48%***	***5.48%***	***5.48%***	***5.48%***	***20.89%***	***20.89%***	***5.71%***	***5.71%***	***12.00%***	***12.00%***
Total Developed International	**307,248,285**	**12.9%**	**11.8%**	**6.93%**	**6.87%**	**6.93%**	**6.87%**	**21.30%**	**21.05%**	**2.76%**	**2.51%**	**10.63%**	**10.27%**
MSCI World Ex US (3)				***5.62%***	***5.62%***	***5.62%***	***5.62%***	***19.49%***	***19.49%***	***0.93%***	***0.93%***	***8.55%***	***8.55%***

ND TEACHERS FUND FOR RETIREMENT
INVESTMENT PERFORMANCE REPORT AS OF SEPTEMBER 30, 2017

	September-17					Current Fiscal YTD		Prior Year FY17		3 Years Ended 6/30/2017		5 Years Ended 6/30/2017	
		Allocation		Quarter									
	Market Value	Actual	Policy	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net
Emerging Markets													
Axiom Emerging Markets Equity Fund (4)	67,286,925	2.8%	2.1%	10.01%	10.01%	10.01%	10.01%	22.29%	22.29%	N/A	N/A	N/A	N/A
DFA Emerging Markets Small Cap Portfolio (4)	20,798,990	0.9%	0.7%	6.07%	6.07%	6.07%	6.07%	19.53%	19.53%	3.49%	3.49%	7.14%	6.86%
Total Emerging Markets	**88,085,915**	**3.7%**	**2.8%**	**9.06%**	**9.06%**	**9.06%**	**9.06%**	**21.55%**	**21.55%**	**3.03%**	**3.02%**	**5.20%**	**4.94%**
MSCI Emerging Markets				***7.89%***	***7.89%***	***7.89%***	***7.89%***	***23.75%***	***23.75%***	***1.07%***	***1.07%***	***3.96%***	***3.96%***
Private Equity													
Adams Street-Brinson 1998 Partnership Fund	57,603	0.0%		-0.41%	-0.41%	-0.41%	-0.41%	-0.16%	-0.16%	1.08%	1.08%	4.12%	4.12%
Adams Street-Brinson 1999 Partnership Fund	149,624	0.0%		-3.63%	-3.63%	-3.63%	-3.63%	-0.25%	-0.25%	-2.85%	-2.85%	3.36%	3.36%
Adams Street-Brinson 2000 Partnership Fund	251,651	0.0%		-1.33%	-1.33%	-1.33%	-1.33%	3.00%	3.00%	-3.33%	-3.33%	0.71%	0.71%
Adams Street-Brinson 2001 Partnership Fund	480,819	0.0%		-2.74%	-2.74%	-2.74%	-2.74%	7.59%	7.59%	-1.19%	-1.19%	5.31%	5.31%
Adams Street-Brinson 2002 Partnership Fund	71,406	0.0%		2.71%	2.71%	2.71%	2.71%	19.56%	19.56%	1.75%	1.75%	5.99%	5.99%
Adams Street-Brinson 2003 Partnership Fund	133,171	0.0%		0.37%	0.37%	0.37%	0.37%	11.44%	11.44%	7.19%	7.19%	11.45%	11.45%
Total Adams Street-Brinson Partnership Funds	1,144,275	0.0%		-5.04%	-5.04%	-5.04%	-5.04%	7.49%	7.49%	-0.71%	-0.71%	4.31%	4.31%
Adams Street-Brinson 1999 Non-US Partnership Fund	32,065	0.0%		0.00%	0.00%	0.00%	0.00%	1.60%	1.60%	0.03%	0.03%	6.19%	6.19%
Adams Street-Brinson 2000 Non-US Partnership Fund	244,514	0.0%		0.00%	0.00%	0.00%	0.00%	13.07%	13.07%	-0.25%	-0.25%	0.63%	0.63%
Adams Street-Brinson 2001 Non-US Partnership Fund	74,826	0.0%		0.00%	0.00%	0.00%	0.00%	-4.37%	-4.37%	11.33%	11.33%	14.86%	14.86%
Adams Street-Brinson 2002 Non-US Partnership Fund	119,866	0.0%		-2.24%	-2.24%	-2.24%	-2.24%	-5.01%	-5.01%	4.42%	4.42%	5.43%	5.43%
Adams Street-Brinson 2003 Non-US Partnership Fund	155,984	0.0%		4.72%	4.72%	4.72%	4.72%	26.53%	26.53%	13.54%	13.54%	18.17%	18.17%
Adams Street-Brinson 2004 Non-US Partnership Fund	123,816	0.0%		-0.61%	-0.61%	-0.61%	-0.61%	9.42%	9.42%	-2.02%	-2.02%	7.06%	7.06%
Total Adams Street-Brinson Non-US Partnership Fund	751,071	0.0%		1.88%	1.88%	1.88%	1.88%	5.22%	5.22%	3.61%	3.61%	7.82%	7.82%
Adams Street 2008 Non-US Partnership Fd	3,561,262	0.1%		2.68%	2.68%	2.68%	2.68%	15.67%	15.67%	11.65%	11.65%	12.86%	12.86%
Adams Street-Brinson BVCF IV	1,539,729	0.1%		-3.37%	-3.37%	-3.37%	-3.37%	7.91%	7.91%	14.68%	14.68%	18.81%	18.81%
Adams Street Direct Co-investment Fund	808,773	0.0%		2.78%	2.78%	2.78%	2.78%	-4.11%	-4.11%	8.35%	8.19%	11.03%	10.79%
Adams Street 2010 - Direct Fund	439,010	0.0%		0.00%	0.00%	0.00%	0.00%	12.03%	12.03%	8.00%	8.00%	11.92%	11.92%
Adams Street 2010 - Non-US Emerging Mkts	663,472	0.0%		2.76%	2.76%	2.76%	2.76%	10.13%	10.13%	14.02%	14.02%	7.90%	7.90%
Adams Street 2010 - Non-US Developed Mkts	1,419,821	0.1%		4.16%	4.16%	4.16%	4.16%	21.63%	21.63%	9.17%	9.17%	10.50%	10.50%
Adams Street 2010 - Partnership Fund	2,832,689	0.1%		0.81%	0.81%	0.81%	0.81%	15.12%	15.12%	13.11%	13.11%	13.30%	13.30%
Total Adams Street 2010 Funds	5,354,993	0.2%		7.73%	7.73%	7.73%	7.73%	15.79%	15.79%	11.36%	11.36%	12.12%	12.12%
Adams Street 2015 Global Fund	3,711,948	0.2%		-0.13%	-0.13%	-0.13%	-0.13%	51.76%	51.76%	N/A	N/A	N/A	N/A
Adams Street 2016 Global Fund	1,502,501	0.1%		-0.63%	-0.63%	-0.63%	-0.63%	N/A	N/A	N/A	N/A	N/A	N/A
Blackrock PEP	6,524,946	0.3%		0.00%	0.00%	0.00%	0.00%	N/A	N/A	N/A	N/A	N/A	N/A
Matlin Patterson - Global Opportunities II	532,360	0.0%		-0.08%	-0.08%	-0.08%	-0.08%	-28.84%	-28.84%	-2.99%	-2.99%	-7.23%	-7.23%
Matlin Patterson - Global Opportunities III	10,965,400	0.5%		-3.94%	-3.94%	-3.94%	-3.94%	6.84%	6.84%	-0.56%	-0.56%	5.14%	5.14%
InvestAmerica - Lewis and Clark Fund	747,294	0.0%		0.00%	0.00%	0.00%	0.00%	22.02%	22.02%	-26.04%	-26.04%	-17.39%	-17.39%
InvestAmerica - L&C II	4,199,104	0.2%		0.00%	0.00%	0.00%	0.00%	10.83%	10.83%	-1.11%	N/A	-2.96%	-2.96%
Corsair III	6,607,686	0.3%		-1.00%	-1.00%	-1.00%	-1.00%	6.83%	6.83%	9.34%	9.34%	3.15%	3.15%
Corsair IV	10,981,970	0.5%		-0.45%	-0.45%	-0.45%	-0.45%	22.98%	22.98%	15.91%	15.91%	14.40%	14.40%
Capital International - Fund V	927,119	0.0%		-1.19%	-1.19%	-1.19%	-1.19%	-49.48%	-49.48%	-31.17%	-31.17%	-20.15%	-20.15%
Capital International - Fund VI	12,241,284	0.5%		-0.36%	-0.36%	-0.36%	-0.36%	9.55%	9.55%	-4.66%	-4.66%	-8.71%	-8.71%
EIG (formerly TCW)	2,813,161	0.1%		0.16%	0.16%	0.16%	0.16%	12.11%	12.11%	-34.78%	-34.78%	-23.36%	-23.36%
Quantum - Energy Partners	2,216,182	0.1%		-39.99%	-39.99%	-39.99%	-39.99%	68.38%	68.38%	1.68%	1.68%	10.37%	10.37%
Total Private Equity (4)	**78,186,815**	**3.3%**	**6.0%**	**-2.48%**	**-2.48%**	**-2.48%**	**-2.48%**	**11.12%**	**11.12%**	**-0.81%**	**-0.82%**	**1.62%**	**1.61%**

ND TEACHERS FUND FOR RETIREMENT
INVESTMENT PERFORMANCE REPORT AS OF SEPTEMBER 30, 2017

	September-17					Current Fiscal YTD		Prior Year FY17		3 Years Ended 6/30/2017		5 Years Ended 6/30/2017	
		Allocation		Quarter									
	Market Value	Actual	Policy	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net
GLOBAL FIXED INCOME	***539,043,084***	***22.6%***	***23.0%***	***1.92%***	***1.86%***	***1.92%***	***1.86%***	***4.93%***	***4.68%***	***3.39%***	***3.14%***	***4.81%***	***4.57%***
Benchmark				***1.47%***	***1.47%***	***1.47%***	***1.47%***	***0.94%***	***0.94%***	***1.64%***	***1.64%***	***2.58%***	***2.58%***
Domestic Fixed Income	***422,116,338***	***17.7%***	***17.0%***	***1.66%***	***1.61%***	***1.66%***	***1.61%***	***6.24%***	***6.02%***	***4.48%***	***4.25%***	***5.76%***	***5.55%***
Benchmark				***1.12%***	***1.12%***	***1.12%***	***1.12%***	***2.62%***	***2.62%***	***2.88%***	***2.88%***	***3.46%***	***3.46%***
Investment Grade Fixed Income													
PIMCO Distressed Senior Credit Opportunities II (4)	47,910,929	2.0%	2.0%	4.24%	4.24%	4.24%	4.24%	17.08%	17.08%	8.43%	8.43%	13.70%	13.70%
Bloomberg Aggregate				***0.85%***	***0.85%***	***0.85%***	***0.85%***	***-0.31%***	***-0.31%***	***2.48%***	***2.48%***		
State Street Long U.S. Treasury Index NL Fund	50,875,378	2.1%	1.3%	0.57%	0.57%	0.57%	0.57%	-7.23%	-7.27%	5.56%	5.52%	N/A	N/A
Bloomberg Long Treasuries				***0.58%***	***0.58%***	***0.58%***	***0.58%***	***-7.22%***	***-7.22%***	5.58%	5.58%		
PIMCO Unconstrained Bond Fund	29,644,242	1.2%	1.6%	2.92%	2.81%	2.92%	2.81%	9.71%	9.22%	3.37%	2.97%	N/A	N/A
3m LIBOR				***0.33%***	***0.33%***	***0.33%***	***0.33%***	***0.98%***	***0.98%***	***0.58%***	***0.58%***		
Declaration Total Return Bond Fund (4)	39,401,103	1.7%	1.6%	1.47%	1.47%	1.47%	1.47%	4.99%	4.99%	3.74%	3.74%	5.14%	5.14%
3m LIBOR				***0.33%***	***0.33%***	***0.33%***	***0.33%***	***0.98%***	***0.98%***	***0.58%***	***0.58%***	***0.46%***	***0.46%***
JP Morgan Mortgage Backed Securities	56,612,733	2.4%	2.6%	0.86%	0.80%	0.86%	0.80%	0.81%	0.61%	N/A	N/A	N/A	N/A
PIMCO Agency MBS	79,309,633	3.3%	3.9%	1.00%	0.96%	1.00%	0.96%	0.36%	0.19%	2.36%	2.18%	2.12%	9.48%
Bloomberg Mortgage Backed Securities Index				***0.96%***	***0.96%***	***0.96%***	***0.96%***	***-0.06%***	***-0.06%***	***2.17%***	***2.17%***	***2.00%***	***2.00%***
Total Investment Grade Fixed Income	**303,754,018**	**12.7%**	**13.0%**	**1.65%**	**1.61%**	**1.65%**	**1.61%**	**3.79%**	**3.65%**	**4.20%**	**4.06%**	**4.67%**	**4.55%**
Bloomberg Aggregate				***0.85%***	***0.85%***	***0.85%***	***0.85%***	***-0.31%***	***-0.31%***	***2.48%***	***2.48%***	***2.21%***	***2.21%***
Below Investment Grade Fixed Income													
Ares ND Credit Strategies	10,897,260	0.5%	0.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cerberus ND Private Credit Fund	10,602,740	0.4%	0.4%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benchmark													
Loomis Sayles High Yield	74,003,535	3.1%	2.1%	2.25%	2.12%	2.25%	2.12%	13.48%	12.91%	4.68%	4.16%	7.93%	7.41%
PIMCO BRAVO II (4)	22,108,892	0.9%	0.9%	0.00%	0.00%	0.00%	0.00%	13.38%	13.38%	10.22%	10.22%	N/A	N/A
GS Mezzanine Partners 2006 Offshore, L.P. (4)	160,597	0.0%	0.0%	4.68%	4.68%	4.68%	4.68%	59.81%	59.81%	27.41%	27.41%	25.21%	25.21%
GS Mezzanine Partners V Offshore, L.P. (4)	589,295	0.0%	0.0%	4.85%	4.85%	4.85%	4.85%	-13.28%	-13.28%	-1.99%	-1.99%	3.94%	3.94%
Bloomberg High Yield 2% Issuer Constrained Index													
Total Below Investment Grade Fixed Income	**118,362,320**	**5.0%**	**4.0%**	**1.71%**	**1.61%**	**1.71%**	**1.61%**	**13.30%**	**12.86%**	**5.37%**	**4.94%**	**8.66%**	**8.21%**
Bloomberg High Yield 2% Issuer Constrained Index				***1.98%***	***1.98%***	***1.98%***	***1.98%***	***12.69%***	***12.69%***	***4.50%***	***4.50%***	***6.90%***	***6.90%***
International Fixed Income	**116,926,746**	**4.9%**	**6.0%**	**2.80%**	**2.71%**	**2.80%**	**2.71%**	***1.15%***	***0.79%***	**-0.37%**	**-0.74%**	**1.60%**	**1.25%**
Benchmark				***2.48%***	***2.48%***	***2.48%***	***2.48%***	***-3.80%***	***-3.80%***	***-2.43%***	***-2.43%***	***-0.36%***	***-0.36%***
Developed Investment Grade Int'l FI													
UBS Global (ex-US) Bond Strategy	43,393,122	1.8%	3.0%	2.40%	2.32%	2.40%	2.32%	-3.69%	-4.00%	-2.44%	-2.78%	-0.55%	-0.86%
Bloomberg Global Aggregate ex-US				***2.48%***	***2.48%***	***2.48%***	***2.48%***	***-3.80%***	***-3.80%***	***-2.43%***	***-2.43%***	***-0.36%***	***-0.36%***
Brandywine Global Opportunistic Fixed Income	73,533,624	3.1%	3.0%	3.05%	2.96%	3.05%	2.96%	4.78%	4.38%	1.39%	1.00%	3.55%	3.15%
Bloomberg Global Aggregate (ex-US)				***1.76%***	***1.76%***	***1.76%***	***1.76%***	***-2.18%***	***-2.18%***	***-0.35%***	***-0.35%***	***0.77%***	***0.77%***
Total Developed Investment Grade Int'l FI	**116,926,746**	**4.9%**	**6.0%**	**2.80%**	**2.71%**	**2.80%**	**2.71%**	**1.15%**	**0.79%**	**-0.37%**	**-0.74%**	**1.60%**	**1.25%**
Bloomberg Global Aggregate ex-US				***2.48%***	***2.48%***	***2.48%***	***2.48%***	***-3.80%***	***-3.80%***	***-2.43%***	***-2.43%***	***-0.36%***	***-0.36%***

ND TEACHERS FUND FOR RETIREMENT
INVESTMENT PERFORMANCE REPORT AS OF SEPTEMBER 30, 2017

	September-17					Current Fiscal YTD		Prior Year FY17		3 Years Ended 6/30/2017		5 Years Ended 6/30/2017	
		Allocation		Quarter									
	Market Value	Actual	Policy	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net	Gross (4)	Net
GLOBAL REAL ASSETS	***403,926,094***	***16.9%***	***18.0%***	***0.81%***	***0.75%***	***0.81%***	***0.75%***	***6.20%***	***5.78%***	***8.02%***	***7.57%***	***8.74%***	***8.31%***
Benchmark				***1.29%***	***1.29%***	***1.29%***	***1.29%***	***4.82%***	***4.82%***	***6.61%***	***6.61%***	***7.29%***	***7.29%***
Global Real Estate													
Invesco Core Real Estate - U.S.A., L.P.	108,319,884			1.46%	1.37%	1.46%	1.37%	8.53%	8.16%	11.91%	11.52%	12.00%	11.58%
INVESCO Real Estate Fund II (4)	78,677			0.00%	0.00%	0.00%	0.00%	22.72%	22.72%	11.61%	11.61%	14.46%	14.46%
Invesco Real Estate Fund III, LP (4)	9,118,630			0.00%	0.00%	0.00%	0.00%	11.58%	11.58%	14.81%	14.81%	15.89%	15.89%
Invesco U.S. Value-Add Fund IV, L.P. (4)	18,515,749			0.00%	0.00%	0.00%	0.00%	8.07%	8.07%	N/A	N/A	N/A	N/A
Invesco Asia Real Estate Fund I, L.P. (4)	116,688			0.00%	0.00%	0.00%	0.00%	982.41%	982.41%	203.10%	203.10%	97.81%	97.81%
Invesco Asia Real Estate Fund III, L.P. (4)	8,909,365			0.00%	0.00%	0.00%	0.00%	21.25%	21.25%	N/A	N/A	N/A	N/A
JP Morgan Strategic & Special Situation Property Blend	83,363,160			2.07%	1.84%	2.07%	1.84%	8.05%	7.08%	11.64%	10.52%	12.91%	11.84%
JP Morgan Alternative Property Fund	122,324			0.00%	0.00%	0.00%	0.00%	6.73%	6.73%	-9.88%	-9.88%	-2.55%	-2.57%
JP Morgan European Opportunistic Property Fund III (4)	4,312,678			3.69%	3.69%	3.69%	3.69%	-0.51%	-0.51%	13.11%	13.11%	4.37%	9.48%
JP Morgan Greater China Property Fund (4)	130,417			0.00%	0.00%	0.00%	0.00%	37.81%	37.81%	23.20%	23.20%	24.95%	24.95%
Total Global Real Estate	**232,987,574**	**9.8%**	**10.0%**	**1.48%**	**1.36%**	**1.48%**	**1.36%**	**9.65%**	**9.12%**	**12.44%**	**11.88%**	**13.01%**	**12.47%**
NCREIF TOTAL INDEX				***1.70%***	***1.70%***	***1.70%***	***1.70%***	***6.97%***	***6.97%***	***10.17%***	***10.17%***	***10.49%***	***10.49%***
Timber													
TIR Teredo Timber, LLC	14,194,277	0.6%		0.00%	0.00%	0.00%	0.00%	-7.02%	-7.02%	5.49%	5.49%	5.75%	5.75%
TIR Springbank, LLC	46,935,238	2.0%		0.00%	0.00%	0.00%	0.00%	-10.13%	-10.13%	-3.20%	-3.20%	-2.37%	-2.37%
Total Timber (4)	**61,129,515**	**2.6%**	**3.0%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**-9.44%**	**-9.44%**	**-0.60%**	**-0.60%**	**0.27%**	**0.27%**
NCREIF Timberland Index				***0.60%***	***0.60%***	***0.60%***	***0.60%***	***3.35%***	***3.35%***	***5.54%***	***5.54%***	***7.16%***	***7.16%***
Infrastructure													
JP Morgan Asian Infrastructure & Related Resources (4)	10,487,960	0.4%		-0.16%	-0.16%	*-0.16%*	-0.16%	*35.48%*	35.48%	6.04%	6.04%	8.92%	8.92%
JP Morgan Infrastructure Investments Fund (IIF)	79,818,968	3.3%		0.00%	0.02%	0.00%	0.02%	7.06%	6.33%	4.38%	3.46%	6.68%	5.72%
Grosvenor Customized Infrastructure Strategies, LP (4)	15,206,077	0.6%		-0.74%	-0.74%	-0.74%	-0.74%	8.70%	8.70%	7.49%	7.49%	8.94%	8.94%
Grosvenor Customized Infrastructure Strategies II (4)	4,296,001	0.2%		-0.25%	-0.25%	-0.25%	-0.25%	3.28%	3.28%	N/A	N/A	N/A	N/A
Total Infrastructure	**109,809,006**	**4.6%**	**5.0%**	**-0.13%**	**-0.12%**	**-0.13%**	**-0.12%**	**9.73%**	**9.21%**	**4.81%**	**4.21%**	**7.21%**	**6.57%**
CPI				***0.89%***	***0.89%***	***0.89%***	***0.89%***	***1.50%***	***1.50%***	***0.58%***	***0.58%***	***1.11%***	***1.11%***
Cash Equivalents													
Northern Trust Collective STIF	6,323,663			0.29%	0.29%	0.29%	0.29%	0.75%	0.75%	0.37%	0.37%	0.25%	0.25%
Bank of ND	5,336,447			0.29%	0.29%	0.29%	0.29%	N/A	N/A	N/A	N/A	N/A	N/A
Total Cash Equivalents	**11,660,110**	**0.5%**	**1.0%**	**0.30%**	**0.30%**	**0.30%**	**0.30%**	**0.74%**	**0.74%**	**0.36%**	**0.36%**	**0.24%**	**0.24%**
90 Day T-Bill				***0.26%***	***0.26%***	***0.26%***	***0.26%***	***0.49%***	***0.49%***	***0.23%***	***0.23%***	***0.17%***	***0.17%***

NOTE: Monthly returns and market values are preliminary and subject to change.

New asset class structure began October 1, 2011. Composite returns for new composites not available prior to that date.

Portfolios moved between asset classes will show historical returns in new position.

(1) Epoch was included in the Large Cap Domestic Equity composite through 12/31/11.

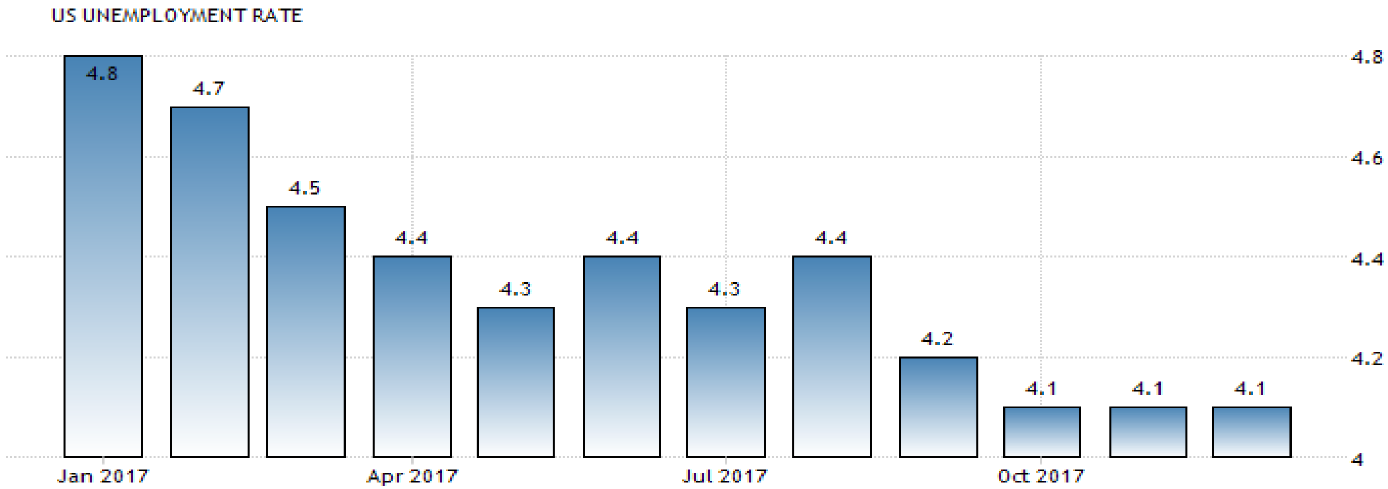
(2) Prior to January 1, 2012, the benchmark was S&P 500.

(3) This benchmark was changed to the MSCI EAFE (unhedged) as of April 1, 2011.

(4) All limited partnership-type (and mutual funds as of 7/1/14) investment returns will only be reported net of fees, which is standard practice by the investment consultant.

U.S. Unemployment Rates

2017



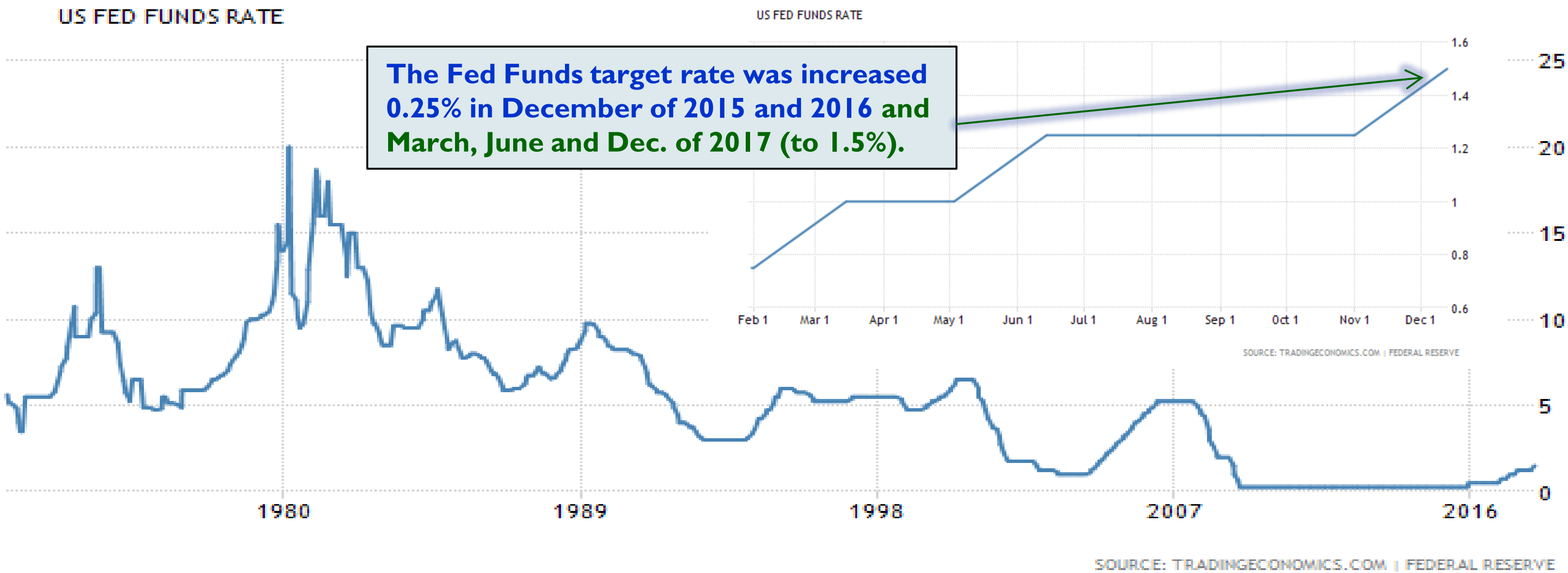
The U.S. unemployment rate stood at 4.1% throughout the fourth quarter of 2017 largely in line with market consensus and at a 17-year low. The number of unemployed declined by 40 thousand to 6.58 million in Dec.

1950 to 2017

U.S. unemployment averaged 5.8% from 1948 until 2017, reaching an all time high of 10.8% in November of 1982 and a record low of 2.5% in May of 1953.

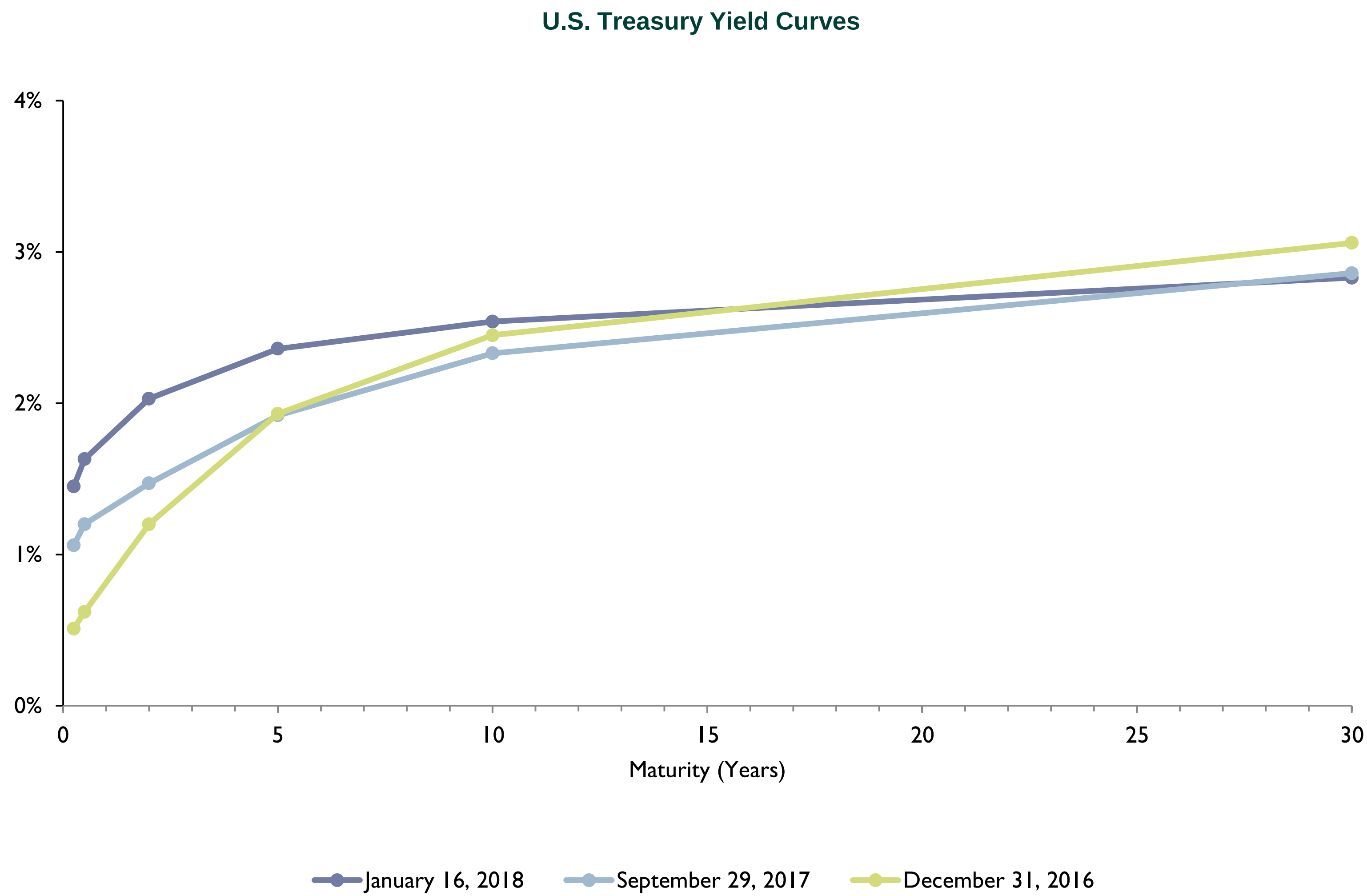
U.S. Fed Funds Rate (1971 to 2017)

<u>Background</u>: The **federal funds rate** is the interest rate at which banks lend reserve balances to other banks overnight (on an uncollateralized basis). Banks with surplus balances lend to those in need of larger balances. Reserve balances are held at the Federal Reserve to maintain the banks' reserve requirements. **Changes in the federal funds rate trigger a chain of events that affect other short-term interest rates,** foreign exchange rates, long-term interest rates, the amount of money and credit, and, ultimately, a range of economic variables, including employment, output, and prices of goods and services. The Federal Reserve uses "monetary policy" to influence the availability and cost of money and credit to help promote national economic goals.

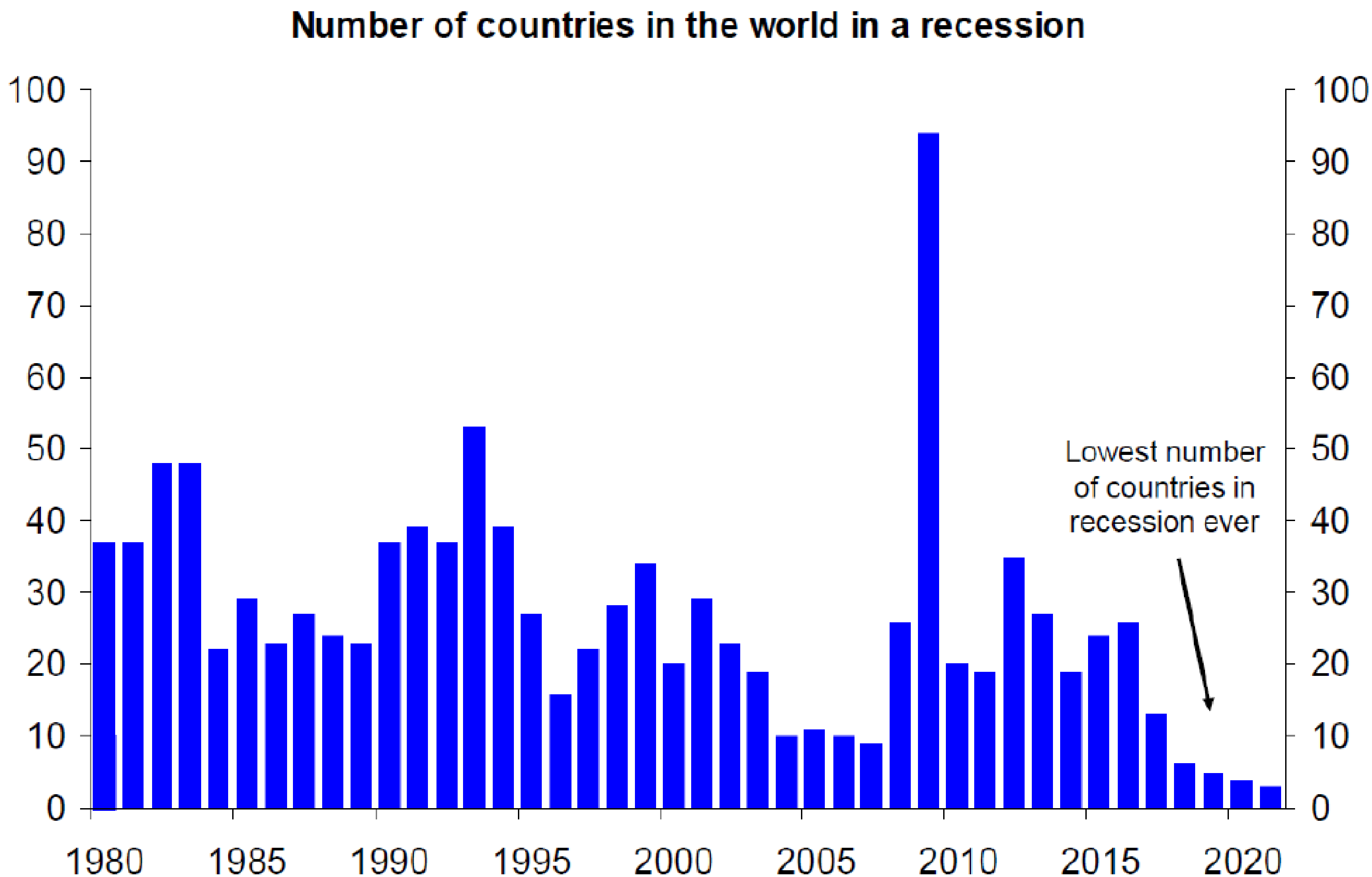


The Federal Reserve raised the target range for its federal funds rate by 25bps to 1%r to 1.25% during its June 2017 meeting, in line with market expectations. Policymakers kept forecasts for one more rate hike this year while increasing growth projections and lowering inflation expectations. In addition, details on how the central bank will start reducing its USD 4.5 trillion portfolio were also provided. Interest Rate in the United States averaged 5.79 percent from 1971 until 2017, reaching an all time high of 20 percent in March of 1980 and a record low of 0.25 percent in December of 2008.

U.S. Treasury Yield Curve continues to flatten with Short-Term Rates rising faster than Long-Term



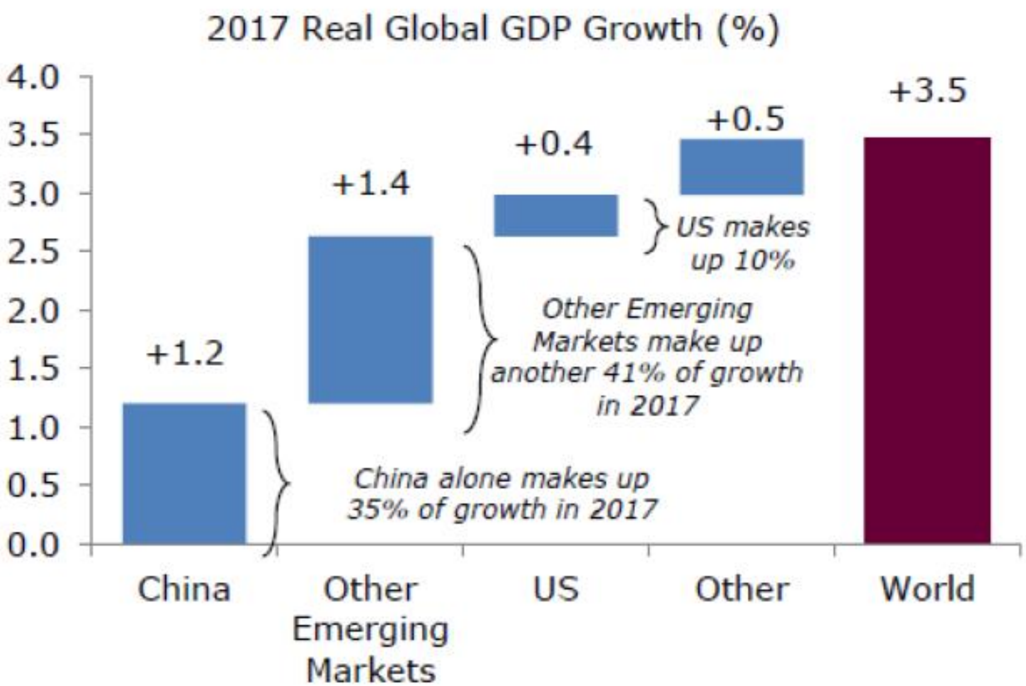
Global Growth & Recession



Source: Deutsche Bank

Global Growth is Positive

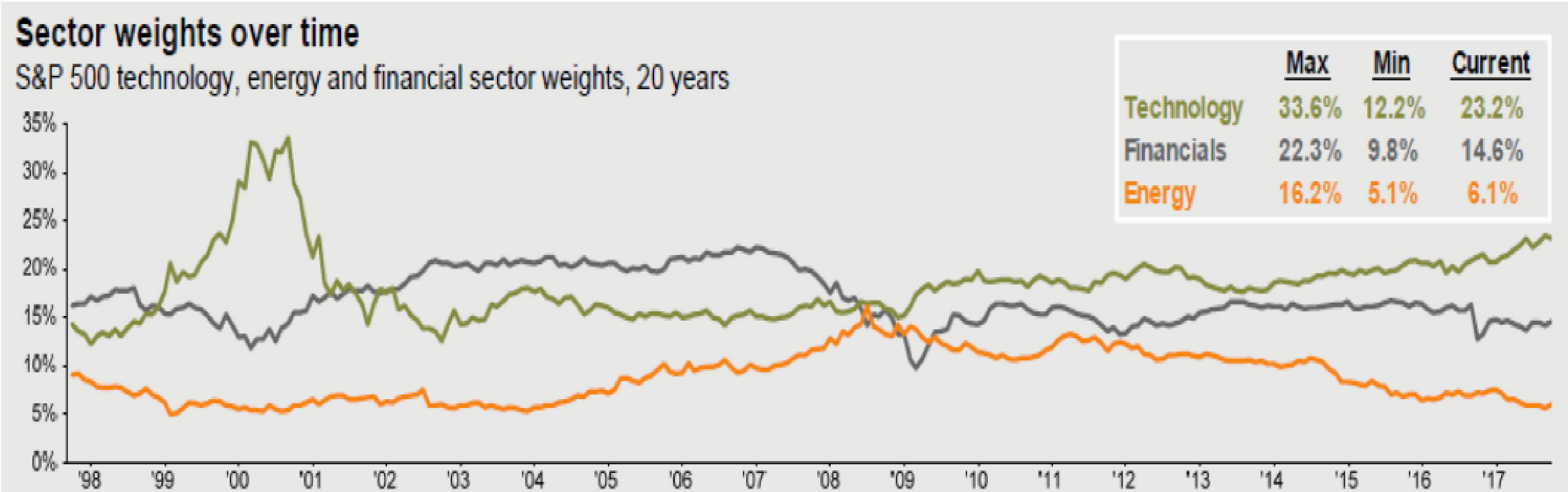
Global inflation and unemployment are low



Source: KKR; International Monetary Fund World Economic Outlook; Have Analytics. Data as of April 18, 2017.

Source: The Economist, 4 November 2017

S&P Sector Composition is Changing

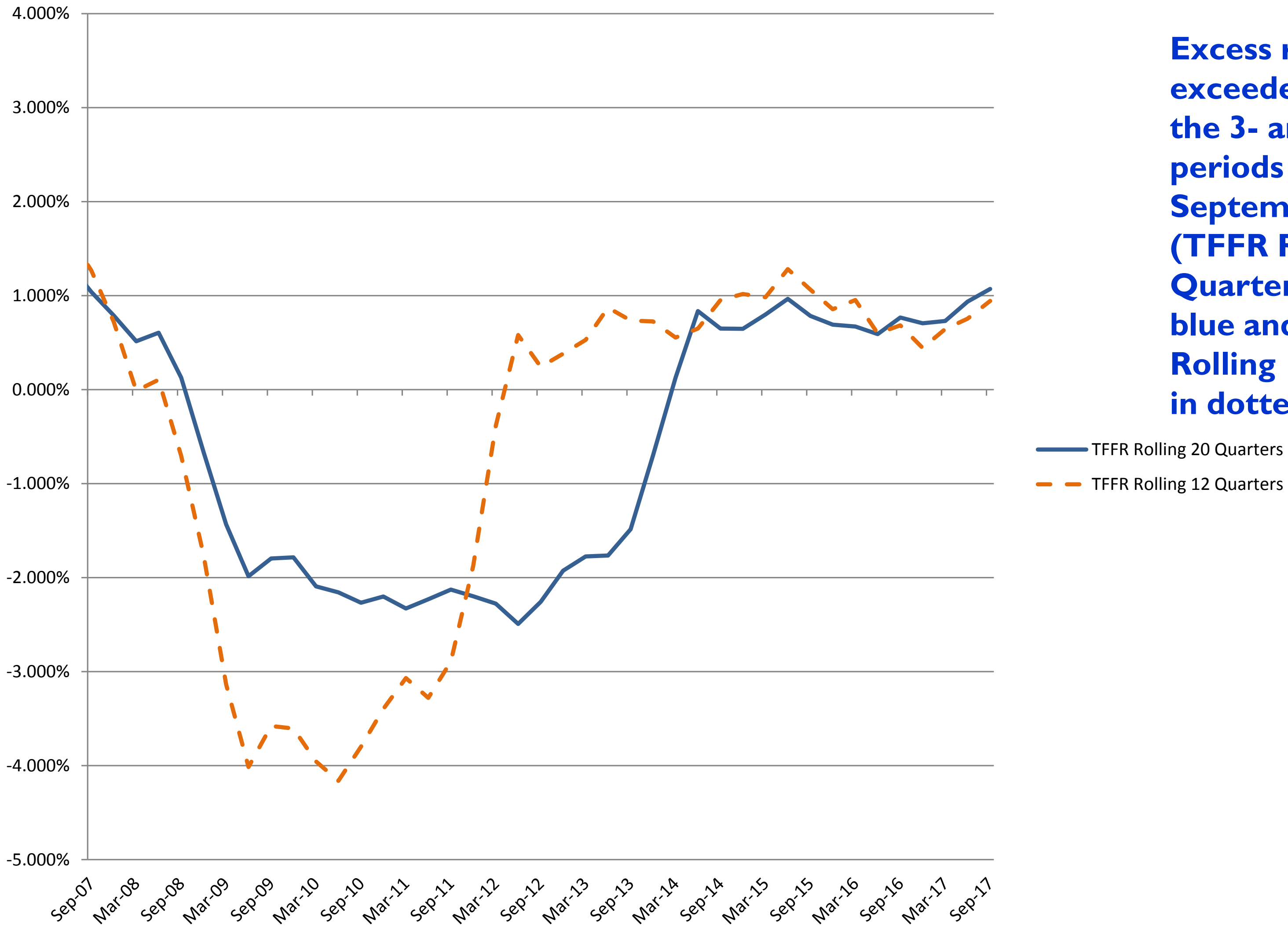


Source: Standard & Poor's, FactSet, J.P. Morgan Asset Management; (Top) MSCI, Russell; (Bottom) MSCI. The MSCI High Dividend Yield Index aims to

- Technology sector weight is growing while Energy and Financials are shrinking, relatively.

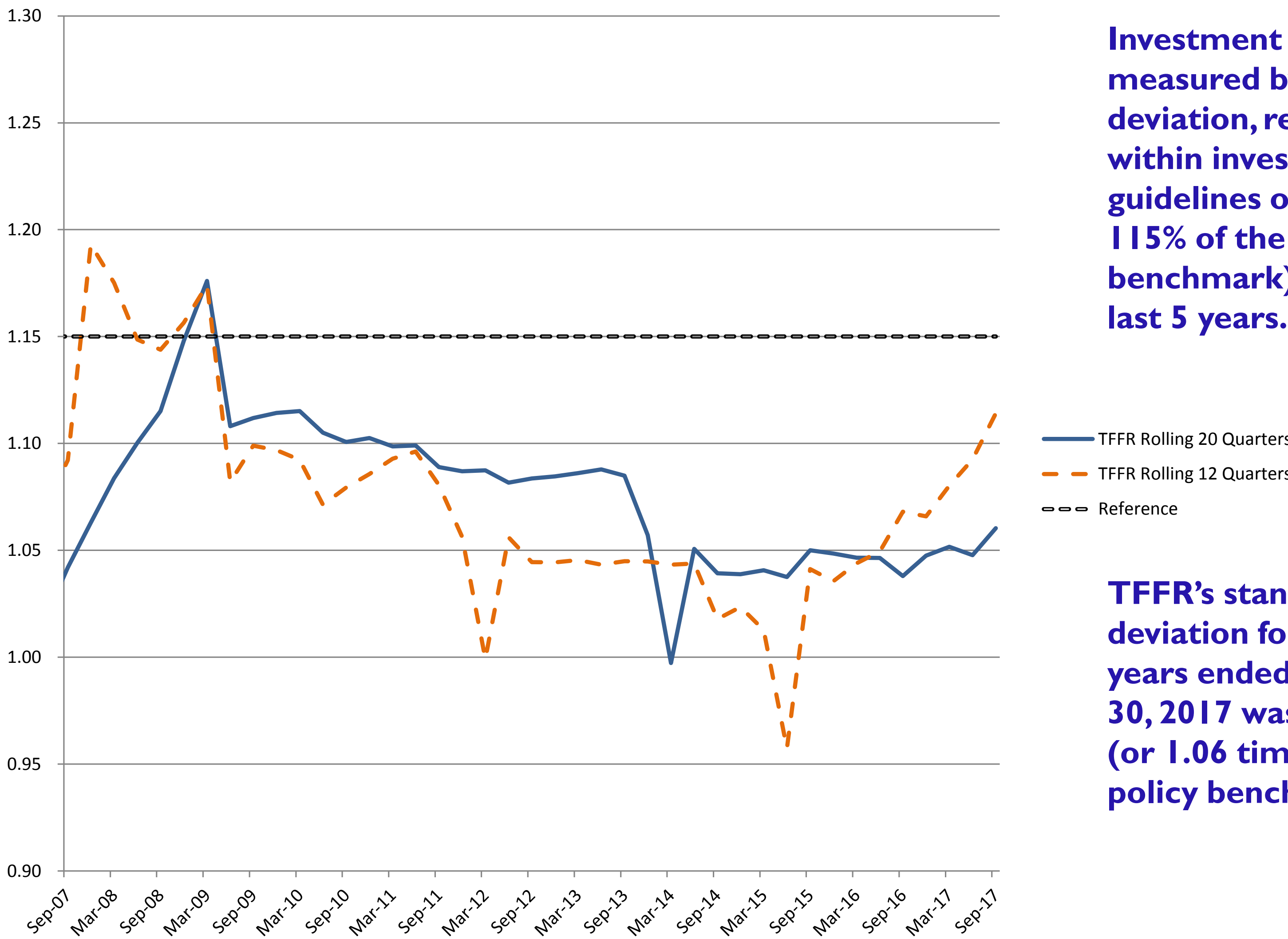
JP Morgan Guide to the Markets®, 4Q 2017 As of September 30, 2017

Excess Return Relative to Policy Benchmark
10 Years Ended 9/30/2017



Excess return exceeded 0.65% for the 3- and 5-year periods ended September 30, 2017 (TFFR Rolling 12 Quarters in solid blue and TFFR Rolling 12 Quarters in dotted orange).

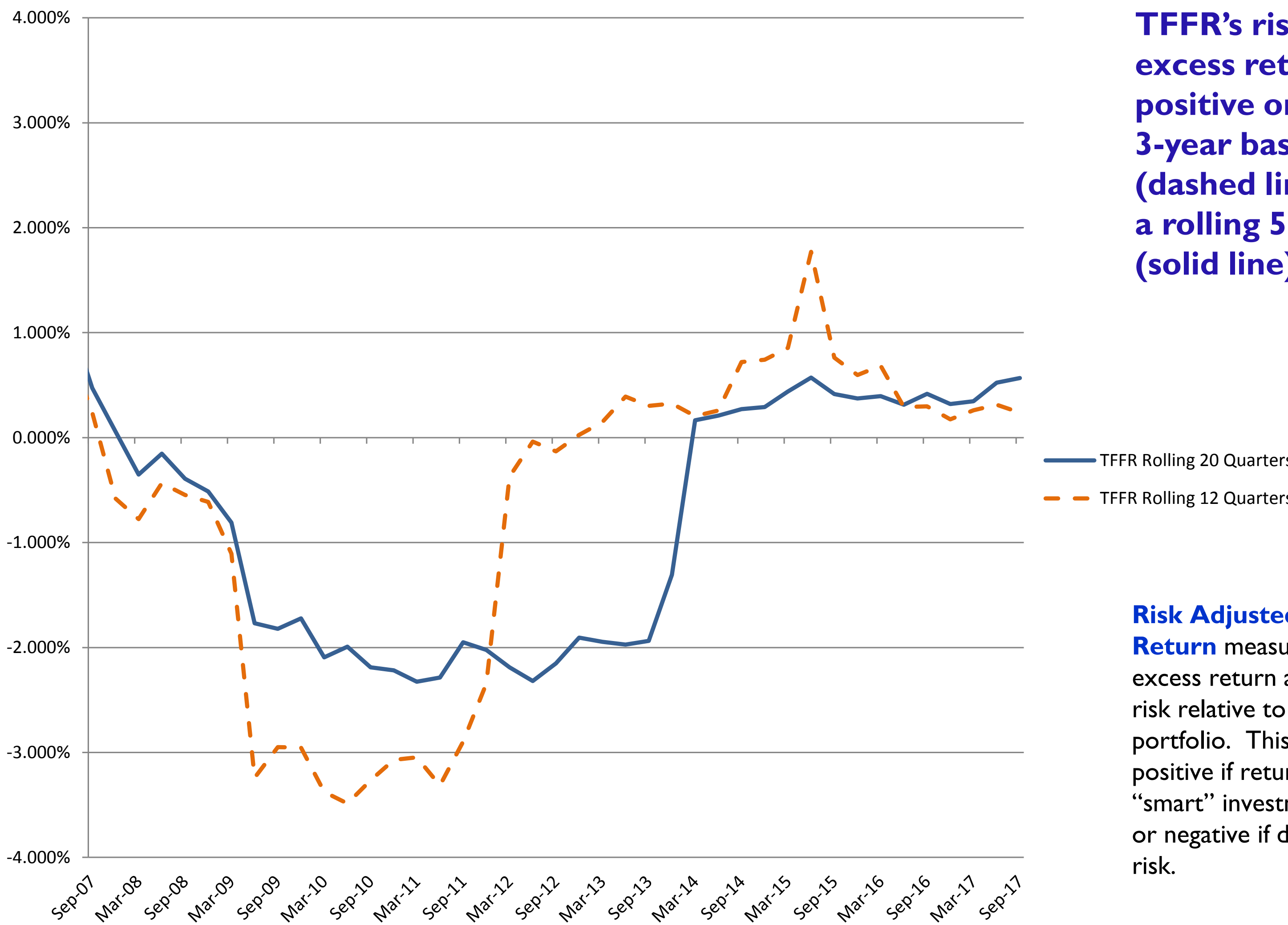
Relative Standard Deviation Relative to Policy Benchmark
10 Years Ended 9/30/2017



Investment risk, as measured by standard deviation, remains within investment guidelines of 1.15 (or 115% of the policy benchmark) over the last 5 years.

TFFR's standard deviation for the 5-years ended Sep. 30, 2017 was 106% (or 1.06 times) the policy benchmark.

Risk Adjusted Excess Return
10 Years Ended 9/30/2017



TFFR's risk adjusted excess return turned positive on a rolling 3-year basis in 2013 (dashed line) and on a rolling 5-year basis (solid line) in 2014.

Risk Adjusted Excess Return measures a portfolio's excess return adjusted by its risk relative to a benchmark portfolio. This metric is positive if returns are due to "smart" investment decisions or negative if driven by excess risk.

RIO Agency Update

As of January 18, 2018

RIO is pleased to report that it expects to be fully staffed in late-January.

Denise Weeks re-joined RIO as a Retirement Benefits Counselor on January 1, 2018. Denise previously worked at RIO for over 14 years before electing to pursue another opportunity in the private sector.

Sara Sauter became RIO's Supervisor of Audit Services on January 1, 2018, noting that she previously worked for the ND Department of Financial Institutions as an Examiner.

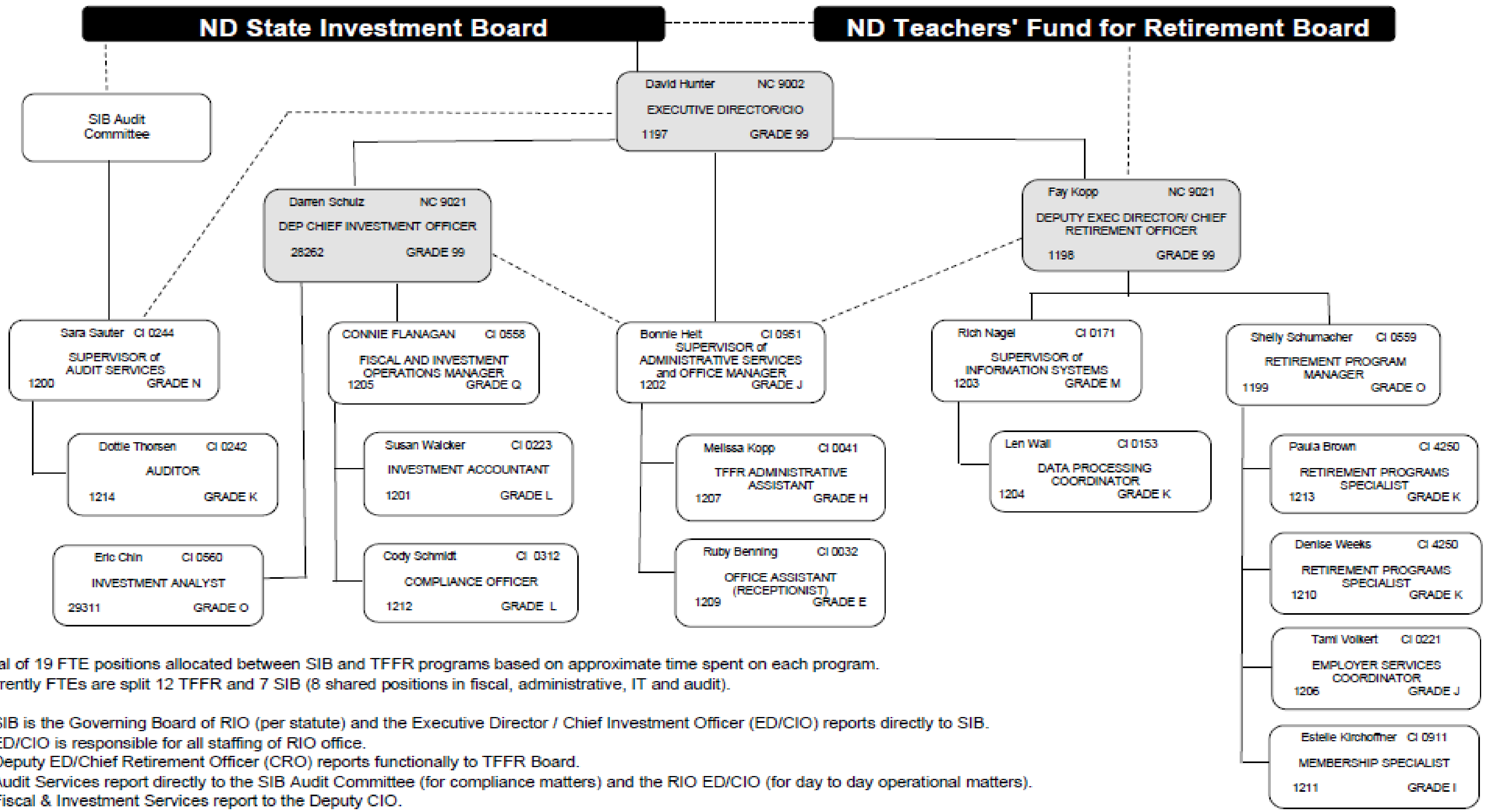
Melissa Kopp is scheduled to join RIO on January 22, 2018, as TFFR's Administrative Assistant. Missy previously worked for the ND Department of Health.

As noted previously, Darlene Roppel retired (as TFFR's Administrative Assistant) in July of 2017, while Terra Miller-Bowley (Audit Supervisor) and Denise Osmond (Retirements Benefits Counselor) accepted new career opportunities at NDDOT in November of 2017.

Attachments:

- NDRIO Organizational Chart (January 2018)
- RIO Employee Survey Results (January 2018)

ND Retirement and Investment Office (RIO)
Agency Organizational Chart (January 2018)



Total of 19 FTE positions allocated between SIB and TFFR programs based on approximate time spent on each program.
Currently FTEs are split 12 TFFR and 7 SIB (8 shared positions in fiscal, administrative, IT and audit).

1. SIB is the Governing Board of RIO (per statute) and the Executive Director / Chief Investment Officer (ED/CIO) reports directly to SIB.
2. ED/CIO is responsible for all staffing of RIO office.
3. Deputy ED/Chief Retirement Officer (CRO) reports functionally to TFFR Board.
4. Audit Services report directly to the SIB Audit Committee (for compliance matters) and the RIO ED/CIO (for day to day operational matters).
5. Fiscal & Investment Services report to the Deputy CIO.
6. Administrative & Office Services report directly to the ED/CIO and is functionally shared with the Deputy ED/CRO and Deputy CIO.
7. Retirement Program and IT Services report to the Deputy ED/CRO.
8. RIO Executive Team includes the Deputy CIO, Deputy ED/CRO & ED/CIO.
9. RIO Management includes the Audit Supervisor, Fiscal & Investment Operations Manager, Administrative Services Supervisor, IT Supervisor, Retirement Program Manager and RIO Executive Team.

RIO Employee Survey
Summary of Results
January 18, 2018

- **RIO employees gave a favorable response on over 79% of the survey questions which is generally consistent with the favorable response rate (of 79.9%) for participating Non-Cabinet Level (NCL) agencies in aggregate.** NCL participating agencies include the Aeronautics Commission, Attorney General, Career and Technical Education, Insurance, Treasurer, Veterans, and Water Commission. Cabinet Level agencies also performed well and received favorable responses on 76% of their survey questions.

- **RIO received "overwhelming positive responses" (defined as a favorable response rate of 90% or higher) on 30% of the survey questions including:**

    1. I understand how my job contributes to our agency's success;
    2. Processes and procedures allow me to meet my customers' needs;
    3. I have passion and excitement about my work;
    4. I have the authority I need to do my job effectively;
    5. The work I do is important;
    6. The physical layout of where I work allows me to be productive;
    7. I feel physically safe and secure to do my job where I work;
    8. I understand what to do if an emergency were to occur at work;
    9. My immediate supervisor believes customer service is important in our team;
    10. I understand my immediate supervisor's expectations of me;
    11. My immediate supervisor holds me accountable for achieving results;
    12. I have a clear understanding of RIO's mission, vision and values;
    13. I enjoy my work;
    14. I am an important part of my employing agency; and
    15. My work gives me a feeling of personal accomplishment.

- **RIO received "materially positive responses" (defined as a favorable response rate of 70% or higher) on over 75% of the survey questions. Favorable responses outnumbered neutral and unfavorable responses for every one of the 50 survey questions for RIO.**

- **RIO's participation rate of 73% (11 of 15) was slightly below all NCL agencies (of 77%) in aggregate and compared favorably to the 61% participation rate reported for Cabinet Level agencies.**

- **Although survey responses were generally positive, RIO received unfavorable responses (from 3 or 4 team members) on 9 questions (listed below). The Executive Director invites all RIO team members to promote and share constructive ideas to enhance our overall agency culture in 2018.**

    1. There is a climate of trust within my team (3 unfavorable);
    2. My teammates display a high degree of teamwork (4 unfavorable);
    3. My team has a climate in which diverse perspectives are valued (3 unfavorable);
    4. My teammates develop and value relationships with others (3 unfavorable);
    5. RIO's senior leadership seeks input before making important decisions (3 unfavorable);
    6. RIO's senior leadership are transparent in their decisions (3 unfavorable);
    7. RIO team members trust and support each other (4 unfavorable);
    8. Information and knowledge are shared openly (4 unfavorable); and
    9. I am satisfied with my opportunities for career growth & advancement (3 unfavorable).

- **Open ended responses focused on improving employee communication, compensation and teamwork, which was also cited in other NCL agency commentary.**

North Dakota Retirement & Investment Office - Team Member Survey (Dec. 2017)

Participation % = 73% (11 of 15 with 3 open positions)

#	Questions 1-2 confirms the respondent is a RIO team member.			
		1-4 yrs.	5-10 yrs.	> 10 yrs.
3	How long have you worked for the State of ND?	1	2	5
		Yes	No	
4	Do you supervise other team members?	2	5	
		Regular	Temp.	Don't know
5	Please select the status of your position?	8	0	1

Response Rate Color Code: Green = 90% to 100% Blue = 60% to 90% White = Less than 60%

#		RIO Agency Favorable	RIO Agency Neutral	RIO Agency Unfavor.	Non-Cabinet Agencies Favorable	Non-Cabinet Agencies Neutal	Non-Cabinet Agencies Unfavor.
6	Training and professional development are available.	64%	27%	9%	80%	11%	9%
7	I feel free to try new things even if my efforts don't succeed.	82%	9%	9%	80%	13%	7%
8	Tools & resources to deliver excellent customer service are present.	73%	27%	0%	80%	14%	6%
9	I understand how my job contributes to our agency's success.	100%	0%	0%	95%	4%	1%
10	Processes and procedure allow me to meet my customers needs.	91%	9%	0%	77%	15%	8%
11	I have passion and excitement about my work.	90%	10%	0%	85%	10%	5%
12	The amount of work I am expected to do is reasonable.	80%	10%	10%	76%	12%	12%
13	I have the authority I need to do my job effectively.	90%	0%	10%	83%	10%	7%
14	The work I do is important.	100%	0%	0%	95%	4%	1%
15	The physical layout of where I work allows me to be productive.	91%	9%	0%	79%	11%	10%
16	I feel physically safe and secure to do my job where I work.	100%	0%	0%	93%	4%	3%
17	I understand what to do if an emergency were to occur at work.	91%	9%	0%	91%	6%	3%
18	My teammates use technology to best support our customers.	82%	9%	9%	86%	11%	3%
19	There is a climate of trust within my team.	55%	18%	27%	77%	13%	10%
20	My teammates display a high degree of teamwork.	64%	0%	36%	77%	15%	8%
21	My team has a climate in which diverse perspectives are valued.	64%	9%	27%	70%	21%	9%
22	My teammates develop and value relationships with others.	73%	0%	27%	77%	16%	7%
23	My teammates are committed to performing quality work.	73%	27%	0%	92%	7%	1%
24	I receive the right amount of communication from my immediate supervisor.	82%	0%	18%	76%	14%	10%
25	My immediate supervisor believes customer service is important in our team.	91%	9%	0%	91%	8%	1%
26	I understand my immediate supervisor's expectations of me.	91%	9%	0%	87%	8%	5%
27	My immediate supervisor holds me accountable for achieving results.	90%	10%	0%	89%	9%	2%
28	I am comfortable giving my immediate supervisor feedback.	82%	9%	9%	86%	9%	5%
29	My immediate supervisor recognizes me for a job well done.	82%	9%	9%	81%	15%	4%
30	My immediate supervisor treats me with respect.	82%	9%	9%	89%	8%	3%
31	I a comfortable raising ethical concerns to my immediate supervisor.	82%	9%	9%	81%	14%	5%
32	My immediate supervisor encourages me to think creatively at work.	82%	0%	18%	76%	19%	6%
33	I have confidence in my immediate supervisor within the agency where I work.	82%	9%	9%	85%	10%	5%
34	My immediate supervisor is willing to take a risk on new ideas.	82%	9%	9%	73%	20%	7%
35	My agency's senior leadership informs us about things we need to know.	70%	20%	10%	64%	21%	15%
36	My agency's senior leadership seeks input from others before making important decision	60%	10%	30%	56%	26%	18%
37	My agency's senior leadership sets an example for others to follow.	70%	10%	20%	72%	19%	9%
38	My agency's senior leadership is transparent in their decisions.	60%	10%	30%	50%	30%	19%
39	My agency's senior leadership treats others with respect.	73%	9%	18%	84%	10%	6%
40	I am confident my agency's senior leadership will respond to unethical behavior.	82%	9%	9%	81%	13%	6%
41	I have confidence in my agency's senior leadership to make the appropriate decisions.	60%	30%	10%	76%	17%	7%
42	The agency where I work values honesty and integrity.	73%	27%	0%	87%	10%	3%
43	I am recognized/rewarded for delivering great customer service to our customers.	64%	18%	18%	65%	21%	14%
44	The agency where I work has a clear sense of purpose and direction.	73%	27%	0%	83%	12%	5%
45	I have a clear understanding of my agency's mission, vision and values.	91%	9%	0%	86%	11%	3%
46	Team members of the agency where I work trust and support each other.	64%	0%	36%	72%	17%	11%
47	Information and knowledge are shared openly.	64%	0%	36%	64%	23%	13%
48	I enjoy my work	100%	0%	0%	89%	9%	2%
49	I have a good work life balance.	89%	11%	0%	86%	11%	3%
50	I am an important part of my employing agency.	100%	0%	0%	84%	13%	3%
51	I would recommend working for my specific agency to a friend.	56%	22%	22%	77%	15%	8%
52	I would recommend the State of North Dakota as a good place to work.	89%	11%	0%	77%	15%	8%
53	My works gives me a feeling of personal accomplishment	100%	0%	0%	86%	10%	4%
54	I am satisfied with my opportunities for career growth and advancement.	56%	11%	33%	59%	20%	21%
55	Considering everything, I am satisfied working here.	89%	11%	0%	84%	11%	5%

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 18, 2018**

SUBJ: **2018 Tax Withholding Changes Update**

Background

The Tax Reform bill (Tax Cuts and Jobs Act, H.R.1) was approved by Congress, and signed into law on December 22, 2017. TFFR benefit recipients who have federal tax withheld may receive a higher net benefit payment than in the past because less federal tax may be withheld under the new law.

Although tax changes are effective January 1, 2018, employers and payroll providers were instructed to continue using the 2017 tax withholding tables until new withholding tables were issued by the IRS and implemented by TFFR. Therefore, January 1, 2018 TFFR benefit recipients saw no change in their federal and state tax withholding since the IRS had not issued new tables at that time.

NOTE: The original version of the House-passed Tax Cuts bill, H.R. 1, would have subjected certain investments of state and local governments' retirement systems to the unrelated business income tax (UBIT). This provision was not included in the Senate version. NCTR, NASRA, NCPERS and other national organizations relayed serious concerns about this provision, and public pension plans around the country worked together to get this provision removed from the final conference report. Dave Hunter and I sent two letters to North Dakota's Congressional delegation sharing our concerns and explaining the effect it would have on public plan portfolio construction and diversification. Copies of the letters are attached. Fortunately, the UBIT provision was not included in the final bill approved by Congress on December 22, 2017.

IRS Issues New Tax Withholding Tables and Initial Guidance

On January 11, 2018, the IRS issued updated 2018 federal tax withholding tables reflecting changes made by the tax reform legislation. Employers and payroll providers have been instructed to begin using the 2018 withholding tables as soon as possible, but not later than February 15, 2018.

The new federal tax withholding tables reflect the increase in the standard deduction, repeal of personal exemptions, and changes in tax rates and brackets. The updated tables are designed to work with the W-4 forms already filed to claim withholding allowances. Therefore, employees do not have to do anything at this time.

To help people determine their withholding, the IRS is revising the Tax Withholding Calculator on IRS.gov. The IRS anticipates this calculator should be available by the end of February. Taxpayers are encouraged to use the calculator to adjust their withholding once it is released. The IRS is also working on revising the Form W-4. The updated Tax Withholding Calculator and new Form W-4 can be used by those who wish to update their withholding in response to the new law, changes in their personal circumstances, or by new workers. The IRS has also stated they anticipate working with the business and payroll community to encourage all workers to file new Form W-4s next year.

The IRS plans to help educate taxpayers about the new withholding guidelines and the withholding calculator to help workers and retirees ensure that they are not having too much or too little withholding taken out of their pay.

TFFR Tax Withholding Implementation Plan

TFFR plans to implement the 2018 federal tax withholding changes for the February 1, 2018 retiree payroll. We anticipate receiving the state withholding information in time to incorporate both federal and state tax changes for the February 1 retiree payments.

TFFR Annual Retirement Benefit Change Notices will be mailed to all 8,521 retirees by February 1, notifying them of any changes in their net monthly benefit benefit as a result of the new tax withholding tables, and confirming their current monthly benefit amount. These statements are typically sent in December, however due to withholding table delays resulting from approval of the federal tax cut bill, TFFR postponed sending these annual benefit notices until new withholding tables were released.

The February 2018 TFFR “Retirement Today” newsletter will include information about the 2018 tax withholding changes reflected in February 1, 2018 benefit payments. We will also inform TFFR retirees about the IRS’ plans to develop a new W-4 tax withholding form and online Tax Withholding Calculator this year.

TFFR staff has received some calls from retirees about the potential impact of the tax law changes, and we expect the call volume to increase in the months ahead. Because the tax withholding needs of retirees varies greatly based on their personal financial situation, TFFR encourages all retirees to review their individual tax situation with a qualified tax advisor, and to adjust tax withholding as needed. A tax withholding review is particularly important this year, as the new tax law takes effect and the IRS provides more information to help people understand the impact of these changes.

Board Information Only. No board action is requested.

November 15, 2017

Senator Hoeven
Senator Heitkamp
Congressman Cramer

Dear:

On behalf of the North Dakota Retirement and Investment Office, which administers the ND Teachers' Fund for Retirement and ND State Investment Board, we are writing to relay serious concerns regarding Section 5001 of the Tax Cuts and Jobs Act (H.R. 1), which could subject certain investments of state and local governmental pension plans to the unrelated business income tax (UBIT). State agencies are Constitutionally exempt from taxation and application of Section 5001 to public pension plans erodes the immunity states and the federal government each enjoy from taxation by the other.

In addition to the revenue loss from the tax itself, the provision imposes significant, complex compliance costs that could impact portfolio construction and diversification of public funds. It could force the consideration of alternative and more costly investment structures in order to avoid being negatively impacted by the UBIT and may diminish investment earnings which are critical to pension funding. Furthermore, Section 5001 is currently scheduled to go into effect for tax years beginning January 1, 2018, which will impact many existing investments that cannot be restructured prior to this effective date.

Investment earnings pay for approximately two-thirds of all state and local government pension benefits, which are taxed when distributed to participants across virtually every state, city and town in the nation. Subjecting public plans to the UBIT will result in a drag on these critically important investment returns, sets a dangerous precedent for taxation of state entities, and will ultimately increase costs to taxpayers. We therefore urge you to remove the application of Section 5001 to state and local retirement systems. At a minimum, the effective date of the UBIT provision should be modified to apply to only those agreements and investments entered into after the date of enactment of the legislation.

We greatly appreciate your time and consideration. If there is any additional information we can provide that would assist you, please do not hesitate to contact us.

Sincerely,

David Hunter
Executive Director and
Chief Investment Officer
ND Retirement and Investment Office
ND State Investment Board
djhunter@nd.gov
701.328.9889

Fay Kopp
Deputy Executive Director and
Chief Retirement Officer
ND Retirement and Investment Office
ND Teachers' Fund for Retirement
fkopp@nd.gov
701.328.9895

December 6, 2017

Senator Hoeven
Senator Heitkamp
Congressman Cramer

Dear:

On behalf of the North Dakota Retirement and Investment Office, which administers the ND Teachers' Fund for Retirement and ND State Investment Board, we are writing to relay serious concerns regarding Section 5001 of the House-passed Tax Cuts and Jobs Act (H.R.1). While not in the Senate bill, this House provision would, for the first time, subject certain investments of state and local governments' retirement systems to the unrelated business income tax (UBIT). We strongly urge you to ensure this provision is excluded from the final conference agreement.

UBIT represents a new tax on public pension plan earnings, which would be nearly double the new corporate rate under tax reform, and is not a clarification or updating of existing law. It overturns a 40- year-old position by the Internal Revenue Service to not apply UBIT to governmental plans – a precedent on which public plans have relied in good faith. Application of UBIT to state and local retirement systems also erodes the Constitutional immunity states and the federal government each enjoy from taxation by the other.

This new tax would also have deleterious effects on public plan portfolio construction and diversification, both increasing risk and lowering returns. Furthermore, it is scheduled to go into effect for tax years beginning January 1, 2018, which would impact existing investments that cannot be restructured.

Since the Great Recession, every state has made difficult changes to one or more of its pension plans to strengthen their financial condition, without the expectation of Congressional assistance. What has been expected, however, is that federal lawmakers will avoid imposing adverse proposals that make it more difficult for state and local governments and their employees to finance retirement benefits, particularly without any formal consideration of the impact on these programs or the resulting disruption to certain investments (including economic development, real estate, and infrastructure).

Investment earnings pay for approximately two-thirds of public pension benefits. Federal taxation of these earnings will increase both cost and volatility, thereby impairing the fiscal health of both the plans and their sponsors, and ultimately increasing costs to taxpayers.

We hope we can count on your assistance in ensuring this provision is not included in the final conference report, and ask that you discuss these concerns with the Conferees.

Thank you very much for your attention to this important matter. Please do not hesitate to contact us if you have any questions or would like additional information.

Sincerely,

David Hunter
Executive Director and
Chief Investment Officer
ND Retirement and Investment Office
ND State Investment Board
djhunter@nd.gov
701.328.9889

Fay Kopp
Deputy Executive Director and
Chief Retirement Officer
ND Retirement and Investment Office
ND Teachers' Fund for Retirement
fkopp@nd.gov
701.328.9895

MEMORANDUM

TO: TFFR Board

FROM: Fay Kopp

DATE: January 18, 2018

SUBJ: TFFR Member Online Update

We are inching towards the Finish Line with TFFR Member Online!

TFFR Member Online <u>GO LIVE</u> date is scheduled for February 1, 2018.

Rich and the IT team (RIO IT, State ITD, CPAS) have been focused on addressing the seemingly never ending technical and security issues that have continued to surface. Now that these issues have been resolved, Shelly plans to work with a few active and retired members to conduct final beta testing. TFFR Member Online Instructions are being finalized, and details are being worked out.

TFFR retirees will receive the first notification that Member Online is available. We plan to include the attached TFFR Member Online Services informational sheet in annual TFFR Retirement Benefit Notices which will be sent to all retirees by February 1.

TFFR Member Online Services will be the feature story in the "Report Card" and "Retirement Today" member newsletters which we anticipate distributing to active and retired members in late February.

Once the initial rollout is conducted, we plan to continue marketing this new online service in member outreach program materials, correspondence, email blasts to members via employers, and other phone and personal interactions with members.

Many thanks to Rich Nagel, Shelly Schumacher, Len Wall, and other RIO, ITD, and CPAS staff who were involved in getting TFFR Member Online into production. It has been a time consuming, challenging project, and we are very excited to make it available to TFFR members. In fact, we are already talking about enhancements to both TFFR Member and Employer Online in the years ahead!

We sincerely appreciate the patience shown by the Board and membership. Thank you.

Board Information Only. No board action is requested.

TFFR Member Online Services

The North Dakota Teachers' Fund for Retirement (TFFR) is very happy to announce that a secure Internet application for TFFR members – **TFFR Member Online Services --** is now available.

Non-retired TFFR members can access the following account information:

- Member Account Value
- Annual Statement
- Salary and Service Detail by Fiscal Year
- Refund Account Details
- Purchase of Service Details

Retired TFFR members and beneficiaries in payment can access the following:

- Retirement Account Details
- Pension Payment Details
- Pension Deduction Details

Accessing Your Account

- Go to www.nd.gov/rio
- Select TFFR link
- Review TFFR Member Online Instructions
- Select TFFR Member Online Services

Before you can access TFFR Member Online Services, you must have a Personal North Dakota Login ID and password. If you do not have a Personal North Dakota Login ID, you will need to register for the ID. If you forget your ID or password, just follow the on-screen instructions.

After you enter your North Dakota Login ID and password, you will be asked to supply your 6-digit TFFR Person ID and other personal information to validate your identity. This information will be entered the first time you access TFFR Member Online Services. Future visits to TFFR Member Online Services will only require you to enter your Personal North Dakota Login and password.

The security of confidential and sensitive information is very important to TFFR. Logging in to the state's secure system with your State of ND Login ID provides a secure environment in which you can access your TFFR account information.

Please sign up for TFFR Member Online today! Contact our office with any questions or comments at 701.328.9885 or 800.952.2970. For technical questions about the online application, please talk to our Information Technology staff. For questions about your TFFR account, please visit with Retirement Services staff. We are happy to assist you.

MEMORANDUM

TO: TFFR Board

FROM: Shelly Schumacher

DATE: January 18, 2018

SUBJ: 2017 GASB 67 & 68 Report

Attached is the July 1, 2017 GASB 67 and 68 Report prepared by TFFR's actuary, Segal Company, and audited by the plan's auditor, CliftonLarsonAllen.

An overview of the information contained in the report will be presented.

After review and acceptance by the Board, the report link on the TFFR website will be sent to all employers for use in employer financial statements (June 30, 2018).

Board Action Requested: Accept the July 1, 2017 GASB 67 & 68 Report.

Segal Consulting

North Dakota Teachers' Fund for Retirement

Governmental Accounting Standards Board (GASB)
Statement Nos. 67 and 68
Actuarial Valuation as of July 1, 2017

This report has been prepared at the request of the Board of Trustees to assist the sponsors of the Fund in preparing their financial report for liabilities associated with the Fund. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Segal Consulting
101 North Wacker Drive, Suite 500, Chicago, IL 60606
T 312.984.8500 www.segalco.com

November 2, 2017

Board of Trustees
North Dakota Teachers' Fund for Retirement
3442 East Century Avenue
Bismarck, ND 58507-7100

Dear Trustees:

We are pleased to submit the following report intended to be used for satisfying certain reporting requirements by Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 as of June 30, 2017.

This report was prepared in accordance with generally accepted actuarial principles and practices. The census and financial information on which our calculations were based was supplied by the staff of the Retirement and Investment Office. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Matthew Strom, FSA, MAAA, Enrolled Actuary.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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); and changes in plan provisions or applicable law.

We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Fund.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Kim Nicholl, FSA, EA, MAAA	*Matthew A. Strom, FSA, EA, MAAA*
Senior Vice President and Actuary	*Vice President and Actuary*

SECTION 1

VALUATION SUMMARY

SECTION 2

GASB 67 AND 68 INFORMATION

SECTION 3

ADDITIONAL INFORMATION FOR GASB 68

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 as of June 30, 2017. This valuation is based on:

- The benefit provisions set forth in the North Dakota Century Code, as administered by the TFFR Board of Trustees;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of July 1, 2017, provided by the North Dakota Retirement and Investment Office;
- The assets of the Fund as of June 30, 2017, provided by the North Dakota Retirement and Investment Office;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Valuation Comments

The following are key observations regarding this actuarial valuation:

- Governmental Accounting Standards Board (GASB) Statements 67 and 68 contain rules for the reporting of pension liabilities for accounting purposes. Statement 67 was effective with the fiscal year ending June 30, 2014, for Plan reporting. Statement 68 was effective with the fiscal year ending June 30, 2015, for employer reporting. The information contained in this valuation is intended to be used (along with other information) in order to comply with both Statements 67 and 68.
- It is important to note that the GASB rules only redefine pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for actual pension funding purposes. Plans can still develop and adopt funding policies under current practices.
- When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age method) is used to determine the funded status of the Plan, the actuarially determined contribution rate, and the effective amortization period. In addition, the GASB blended discount rate calculation results in the same discount rate (expected return on assets) as used for funding purposes. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as the Actuarial Accrued Liability (AAL) measure for funding.

- The net pension liability (NPL) is equal to the difference between the TPL and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis. The NPL decreased from $1.47 billion as of June 30, 2016, to $1.37 billion as of June 30, 2017, primarily as a result of favorable investment results for fiscal year ending in June 30, 2017. Changes in these values during the prior fiscal year ending June 30, 2017, can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL was 7.75% as of both June 30, 2017 and June 30, 2016. The detailed calculations used in this derivation were provided under separate cover. Various information that is required to be disclosed can be found throughout Section 2 and Section 3.

Summary of Key Valuation Results

	2017	2016
Disclosure elements for fiscal year ending June 30:		
Service cost	$75,476,063	$68,239,440
Total pension liability	3,734,016,828	3,589,393,851
Plan fiduciary net position	2,360,491,075	2,124,335,288
Net pension liability	1,373,525,753	1,465,058,563
Plan fiduciary net position as a percentage of total pension liability	63.2%	59.2%
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	$89,231,211	$84,724,122
Actual contributions	86,058,868	82,839,932
Contribution deficiency (excess)	3,172,343	1,884,190
Demographic data as of July 1:		
Number of retirees and beneficiaries	8,501	8,249
Number of inactive vested members	1,600	1,601
Number of inactive non-vested members	878	779
Number of active members	10,874	10,813
Key assumptions:		
Single equivalent discount rate	7.75%	7.75%
Municipal bond index	3.58%	2.85%
Inflation rate	2.75%	2.75%
Projected salary increases	4.25% to 14.50%, varying by service	4.25% to 14.50%, varying by service

Important Information about Actuarial Valuations

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our funding valuation report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by TFFR. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by TFFR.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of the TFFR to assist the sponsors of the Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

- If TFFR is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. TFFR should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

EXHIBIT 1

Membership Data

	July 1, 2017	July 1, 2016
Retired members and beneficiaries	8,501	8,249
Vested inactive members	1,600	1,601
Non-vested inactive members	878	779
Active members:		
Vested	7,543	7,433
Non-vested	3,331	3,380
Total active members	10,874	10,813
Total membership	21,853	21,442

Active Membership By Plan Eligibility

	July 1, 2017	July 1, 2016
Tier 1 Grandfathered	2,221	2,559
Tier 1 Non-grandfathered	3,237	3,272
Tier 2	5,416	4,982
Total active membership	10,874	10,813

EXHIBIT 2

Net Pension Liability

	June 30, 2017	June 30, 2016
The components of the net pension liability are as follows:		
Total pension liability	$3,734,016,828	$3,589,393,851
Plan fiduciary net position	(2,360,491,075)	(2,124,335,288)
Net pension liability	$1,373,525,753	$1,465,058,563
Plan fiduciary net position as a percentage of the total pension liability	63.2%	59.2%

Plan provisions. The plan provisions used in the measurement of the net pension liability are the same as those used in the actuarial valuation as of July 1, 2017.

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2017, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	4.25% to 14.50%, varying by service, including inflation and productivity
Investment rate of return	7.75%, net of investment expenses
Cost-of-living adjustments	None

For active and inactive members, mortality rates were based on the RP-2014 Employee Mortality Table, projected generationally using Scale MP-2014. For healthy retirees, mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table set back one year, multiplied by 50% for ages under 75 and grading up to 100% by age 80, projected generationally using Scale MP-2014. For disabled retirees, mortality rates were based on the RP-2014 Disabled Mortality Table set forward four years.

The actuarial assumptions used were based on the results of an experience study dated April 30, 2015. They are the same as the assumptions used in the July 1, 2017, funding actuarial valuation for TFFR.

EXHIBIT 3

Target Asset Allocation

The long-term expected investment rate of return assumption was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These returns 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. Projected arithmetic real rates of return for each major asset class included in the Fund's target asset allocation are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equities	58%	6.70%
Global Fixed Income	23%	0.80%
Global Real Assets	18%	5.20%
Cash Equivalents	1%	0.00%
Total	100%	

Discount rate: The long-term expected rate of return on pension plan investments is 7.75%. The high quality tax-exempt general obligation municipal bond rate (Bond Buyer 20-Bond GO Index) as of the closest date prior to the valuation date of June 30, 2017, is 3.58%.

The discount rate used to measure the total pension liability was 7.75% as of June 30, 2017. The projection of cash flows used to determine the discount rate assumes that member and employer contributions will be made at rates equal to those based on the July 1, 2017, Actuarial Valuation Report. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments for current plan members as of June 30, 2017. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2017.

EXHIBIT 4

Discount Rate Sensitivity

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of June 30, 2017 and June 30, 2016, calculated using the discount rate of 7.75%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate.

	1% Decrease	Current Discount Rate	1% Increase
Net pension liability as of June 30, 2016	$1,900,291,033	$1,465,058,563	$1,102,551,032
Net pension liability as of June 30, 2017	$1,826,126,843	$1,373,525,753	$996,748,988

EXHIBIT 5

Schedule of Changes in Net Pension Liability

	2017	2016
Total pension liability		
Service cost	$75,476,063	$68,239,440
Interest	276,412,402	265,439,909
Change of benefit terms	0	0
Differences between expected and actual experience	(10,748,944)	(8,092,800)
Changes of assumptions	0	0
Benefit payments, including refunds of employee contributions	(196,516,544)	(185,968,680)
Net change in total pension liability	$144,622,977	$139,617,869
Total pension liability – beginning	3,589,393,851	3,449,775,982
Total pension liability – ending (a)	$3,734,016,828	$3,589,393,851
Plan fiduciary net position		
Contributions – employer	$86,058,868	$82,839,932
Contributions – member	79,309,153	76,342,685
Contributions – purchased service credit	2,553,200	2,768,245
Contributions – other	235,890	44,966
Net investment income	266,688,651	8,238,996
Benefit payments, including refunds of employee contributions	(196,516,544)	(185,968,680)
Administrative expense	(2,173,431)	(1,851,656)
Net change in plan fiduciary net position	$236,155,787	($17,585,512)
Plan fiduciary net position – beginning	2,124,335,288	2,141,920,800
Plan fiduciary net position – ending (b)	$2,360,491,075	$2,124,335,288
Net pension liability – ending (a) – (b)	$1,373,525,753	$1,465,058,563
Plan fiduciary net position as a percentage of the total pension liability	63.2%	59.2%
Actual covered employee payroll	$674,971,342	$649,724,868
Plan net pension liability as percentage of covered employee payroll	203.5%	225.5%

EXHIBIT 6

Schedule of Employer Contributions

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Actual Covered Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2013	$52,396,153	$59,300,720	$(6,904,567)	$551,655,590	10.75%
2014	59,513,485	62,355,146	(2,841,661)	580,053,235	10.75%
2015	71,167,632	78,422,098	(7,254,466)	615,104,860	12.75%
2016	84,724,122	82,839,932	1,884,190	649,724,868	12.75%
2017	89,231,211	86,058,868	3,172,343	674,971,342	12.75%

Notes to Exhibit 6

Methods and assumptions used to establish actuarially determined contribution rates:	
Valuation date	Actuarially determined contribution rates are calculated as of June 30, with appropriate interest to the middle of the fiscal year.
Actuarial cost method	Entry Age Actuarial cost method
Amortization method	Level percentage of pay, closed
Remaining amortization period	26 years as of July 1, 2017
	The amortization of unfunded actuarial accrued liability (UAAL) within the actuarially determined contribution rate calculation is based on the level percentage of pay required to amortize the UAAL over the 30-year closed period that began July 1, 2013. For this calculation, payroll is assumed to increase 3.25% per year.
Asset valuation method	The market value of assets with a five-year phase-in of actual return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year).
Actuarial assumptions:	
Investment rate of return	7.75%, net of investment expenses
Inflation rate	2.75%
Projected salary increases	4.25% to 14.50%, varying by service, includes inflation and productivity
Mortality*	Post-retirement Non-Disabled: RP-2014 Healthy Annuitant Mortality Table set back one year, multiplied by 50% for ages under 75 and grading up to 100% by age 80, projected generationally using Scale MP-2014.
	Pre-retirement Non-Disabled: RP-2014 Employee Mortality Table, projected generationally using Scale MP-2014.
	Disabled: RP-2014 Disabled Mortality table set forward 4 years.
Other assumptions:	Same as those used in the July 1, 2017, and July 1, 2016, actuarial funding valuations.

* *The mortality rates were based on historical and current demographic data, as used in the experience study dated April 30, 2015. The underlying tables reasonably reflect the mortality experience of the Fund as of the measurement date.*

Changes in the collective net pension liability from the beginning of the year to the end of the year arise from the net difference between changes in the total pension liability and plan fiduciary net position that occurred during the year. Changes in net pension liability will be recognized immediately as pension expense, or reported as deferred outflows of resources related to pensions or deferred inflows of resources related to pensions, depending on the nature of the change.

Differences between actual and expected investment-related experience are recognized over a closed five-year period. Differences between actual and expected non-investment-related experience and changes of assumptions are recognized over the average of the expected remaining service lives of all members who are provided with pensions through the pension plan (active employees and inactive employees). The amounts below that are not included in pension expense for the current year are included in deferred outflows of resources or deferred inflows of resources related to pensions.

EXHIBIT A

Reconciliation of Collective Net Pension Liability

	Increase/(Decrease) For Fiscal Year Ending June 30, 2017		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) – (b)**
Balances at beginning of year	$3,589,393,851	$2,124,335,288	$1,465,058,563
Changes for the year			
Service cost	75,476,063		75,476,063
Interest	276,412,402		276,412,402
Differences between expected and actual experience	(10,748,944)		(10,748,944)
Contributions – employer		86,058,868	(86,058,868)
Contributions – member		79,309,153	(79,309,153)
Contributions – purchased service credit		2,553,200	(2,553,200)
Contributions – other		235,890	(235,890)
Net investment income		266,688,651	(266,688,651)
Benefit payments, including refunds of employee contributions	(196,516,544)	(196,516,544)	0
Administrative expense		(2,173,431)	2,173,431
Changes of assumptions	--		--
Change of benefit terms	--		--
Net changes	144,622,977	236,155,787	(91,532,810)
Balances at end of year	$3,734,016,828	$2,360,491,075	$1,373,525,753

As shown in Exhibit A, during the plan year that ended June 30, 2017, the changes in net pension liability due to differences between expected and actual demographic experience is a decrease of $10,748,944. The average expected remaining service lives of all members is 7 years, determined as of July 1, 2016 (the beginning of the measurement period ending June 30, 2017). Therefore, of the $10,748,944 demographic gain, $1,535,563 is recognized in pension expense in the current year and $9,213,381 is reflected as a deferred inflow of resources related to pensions.

Based on the assumed investment return of 7.75%, the expected net investment income for the year was $163,452,836. As shown in Exhibit A, the actual net investment income for the year was $266,688,651. The difference between actual and expected investment experience is a decrease in net pension liability of $103,235,815, which is recognized over a 5-year period. Of this amount, $20,647,163 is reflected in the current year and $82,588,652 is reflected as a deferred inflow of resources related to pensions.

EXHIBIT B

Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	Year Established	Original Balance	Original Amortization Period	Amortization Amount During 2017	Outstanding Balance at June 30, 2017
Outflows					
Demographics	2014	$9,347,346	7 years	$1,335,335	$4,006,006
Demographics	2015	2,209,258	7 years	315,608	1,262,434
Assumptions	2015	171,324,647	7 years	24,474,950	97,899,797
Investments	2015	93,160,436	5 years	18,632,087	37,264,175
Investments	2016	156,759,166	5 years	31,351,833	94,055,500
Total outflows				**$76,109,813**	**$234,487,912**
Inflows					
Investments	2014	$148,793,866	5 years	$29,758,773	$29,758,774
Demographics	2016	8,092,800	7 years	1,156,114	5,780,572
Demographics	2017	10,748,944	7 years	1,535,563	9,213,381
Investments	2017	103,235,815	5 years	20,647,163	82,588,652
Total inflows				**$53,097,613**	**$127,341,379**

EXHIBIT B (continued)
Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	June 30, 2017	June 30, 2016
Deferred Outflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	$5,268,440	$6,919,383
Changes of assumptions	97,899,797	122,374,747
Net difference between projected and actual earnings on pension plan investments	18,972,249	121,786,048
Total Deferred Outflows of Resources	$122,140,486	$251,080,178
Deferred Inflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	$14,993,953	$6,936,686
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Total Deferred Inflows of Resources	$14,993,953	$6,936,686

Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:

Year Ended June 30:		
2017		$45,194,926
2018	$23,012,199	45,194,925
2019	52,770,974	74,953,700
2020	34,138,888	56,321,614
2021	1,451,717	23,634,443
2022	(2,691,679)	
Thereafter	(1,535,566)	(1,156,116)

Exhibit C below shows the individual components of collective pension expense, which totaled $131,523,017 for the fiscal year that ended June 30, 2017.

Annual pension expense for the year can also be viewed as the change in net pension liability, plus employer contributions for the year, less the change in outstanding balances of deferred outflows and deferred inflows of resources from the end of the prior fiscal year to end of the current fiscal year. From Exhibit A, the change in net pension liability during the year was ($91,532,810) and employer contributions were $86,058,868. The net value of deferred outflows and deferred inflows of resources as of the end of the current fiscal year is $107,146,533 compared to the net value as of the end of the prior fiscal of $244,143,492 for a change of ($136,996,959). Therefore, the pension expense for the fiscal year that ended June 30, 2017, is ($91,532,810) + $86,058,868 – ($136,996,959), or $131,523,017.

EXHIBIT C

Collective Pension Expense

	Fiscal Year Ending June 30, 2017	Fiscal Year Ending June 30, 2016
Components of pension expense		
Service cost	$75,476,063	$68,239,440
Interest on the total pension liability	276,412,402	265,439,909
Projected earnings on plan investments	(163,452,836)	(164,998,162)
Contributions – member	(79,309,153)	(76,342,685)
Contributions – purchased service credit	(2,553,200)	(2,768,245)
Contributions – other	(235,890)	(44,966)
Administrative expense	2,173,431	1,851,656
Current year recognition of:		
Changes of assumptions	24,474,950	24,474,950
Difference between expected and actual experience	(1,040,734)	494,829
Difference between projected and actual earnings on pension plan investments	(422,016)	20,225,147
Change of benefit terms	0	0
Total pension expense	$131,523,017	$136,571,873

TFFR is classified as a cost-sharing multiple-employer defined benefit pension plan for GASB accounting purposes. As specified in GASB 68, employers that participate in TFFR are required to recognize their proportionate share of the collective pension amounts for all benefits provided through the Fund. Pension amounts to be recognized by employers include the net pension liability, deferred outflows of resources related to pensions, deferred inflows of resources related to pensions, and pension expense. In addition, the effects of (1) a change in the employer's proportion of the collective net pension liability and (2) differences during the measurement period between the employer's contributions and its proportionate share of the total of contributions from employers included in the collective net pension liability are required to be determined and recognized.

The basis of an employer's allocation of the collective pension amounts should be consistent with the manner in which contributions to the plan are determined. Since contributions to TFFR are collected as a percentage of payroll, covered employee payroll for the fiscal year ending June 30, 2017, is used as the proportionate share allocation basis. Retirement and Investment Office staff supplied covered employee payroll for each employer.

The net effect of the change on an employer's proportionate share of the collective net pension liability and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all members who are provided with pensions through TFFR.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2017, is recognized over the same period. However, since TFFR contributions are collected on the same basis as the proportionate share allocation, there is no difference between the actual employer contributions and the proportionate share of the employer contributions. If employers no longer report to TFFR, they will continue to remain on the schedule until their deferral balances are depleted.

Exhibits D and E that follow show the proportionate share information for employers of TFFR for the fiscal year ending June 30, 2017.

5700959v1/13475.002

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Alexander School	$ 1,201,881	0.17806399%
Anamoose School	764,136	0.11321014%
Apple Creek Elem School	347,729	0.05151764%
Ashley School	949,234	0.14063328%
Bakker Elem School	38,000	0.00562987%
Barnes County North	1,620,792	0.24012753%
Beach School	2,091,332	0.30984007%
Belcourt School	8,420,198	1.24748965%
Belfield Public School	1,491,442	0.22096375%
Beulah School	3,433,116	0.50863139%
Billings Co. School Dist.	832,495	0.12333776%
Bismarck Public Schools	72,834,836	10.79080425%
Bismarck State College	-	0.00000000%
Blessed John Paul II Catholic Sch Network	-	0.00000000%
Bottineau School	3,637,965	0.53898062%
Bowbells School	627,466	0.09296183%
Bowman School	2,839,611	0.42070099%
Burke Central School	936,527	0.13875068%
Burleigh County Spec. Ed.	95,698	0.01417803%
Carrington School	2,885,459	0.42749362%
Cavalier School	2,253,966	0.33393501%
Center Stanton School	1,500,244	0.22226779%
Central Cass School	3,636,727	0.53879722%
Central Elementary School	61,534	0.00911657%
Central Valley School	1,271,348	0.18835583%
Dakota Prairie School	1,888,476	0.27978617%
Devils Lake School	10,420,476	1.54383974%
Dickinson School	19,316,437	2.86181591%
Divide School	2,486,864	0.36843994%
Drake School	451,320	0.06686508%
Drayton School	1,378,850	0.20428277%
Dunseith School	3,200,702	0.47419828%
E Central Ctr Exc Childn	799,793	0.11849291%
Earl Elem. School	31,900	0.00472613%
Edgeley School	1,312,346	0.19442995%
Edmore School	702,511	0.10408017%
Eight Mile School	1,535,542	0.22749741%
Elgin-New Leipzig School	1,192,662	0.17669820%
Ellendale School	1,711,875	0.25362188%
Emerado Elementary School	603,448	0.08940345%
Enderlin Area School District	2,114,503	0.31327299%
Fairmount School	1,006,771	0.14915754%
Fargo Public Schools	70,271,012	10.41096235%
Fessenden-Bowdon School	1,079,503	0.15993316%
Finley-Sharon School	1,002,340	0.14850105%
Flasher School	1,169,877	0.17332245%
Fordville Lankin School	590,953	0.08755230%
Fort Ransom Elem School	164,612	0.02438796%
Fort Totten School	1,555,507	0.23045523%
Fort Yates School	1,323,672	0.19610793%
Gackle-Streeter Pub Sch	794,101	0.11764958%
Garrison School	2,339,316	0.34658000%
Glen Ullin School	1,186,560	0.17579406%
Glenburn School	1,871,652	0.27729355%
Goodrich School	288,839	0.04279276%
Grafton School	4,498,285	0.66644086%
Grand Forks School	47,652,846	7.05998058%
Great North West Cooperative	138,068	0.02045539%
Grenora School	1,166,826	0.17287041%
Griggs County Central Sch	1,656,188	0.24537163%
Gst Educational Services	1,694,248	0.25101030%
Halliday School	393,566	0.05830853%
Hankinson School	1,473,729	0.21833944%
Harvey School	2,342,625	0.34707023%
Hatton Eielson Psd	1,156,380	0.17132285%
Hazelton - Moffit School	861,082	0.12757313%
Hazen School	2,921,799	0.43287744%
Hebron School	1,212,372	0.17961834%

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Hettinger School	1,410,753	0.20900929%
Hillsboro School	2,583,852	0.38280913%
Hope School	627,976	0.09303746%
Horse Creek Elem. School	66,200	0.00980783%
James River Multidistrict Spec Ed Unit	1,437,415	0.21295939%
Jamestown School	13,476,470	1.99659878%
Kenmare School	1,819,242	0.26952871%
Kensal School	290,286	0.04300719%
Kidder County School District	2,078,879	0.30799522%
Killdeer School	2,730,627	0.40455446%
Kindred School	3,280,787	0.48606317%
Kulm School	1,004,899	0.14888031%
Lake Region Spec Ed	1,722,540	0.25520199%
Lakota School	1,186,104	0.17572653%
Lamoure School	1,569,670	0.23255360%
Langdon Area School	2,281,561	0.33802342%
Larimore School	2,156,303	0.31946590%
Leeds School	1,079,156	0.15988182%
Lewis And Clark School	2,768,029	0.41009581%
Lidgerwood School	1,202,124	0.17810005%
Linton School	1,631,180	0.24166663%
Lisbon School	3,518,035	0.52121244%
Litchville-Marion School	887,132	0.13143247%
Little Heart Elem. School	122,000	0.01807484%
Logan County	4,079	0.00060436%
Lone Tree Elem. School	228,328	0.03382781%
Lonetree Spec Ed Unit	160,160	0.02372844%
Maddock School	963,659	0.14277037%
Mandan Public Schools	20,136,230	2.98327186%
Mandaree School	1,473,602	0.21832065%
Manning Elem School	97,941	0.01451045%
Manvel Elem. School	842,992	0.12489308%
Maple Valley School	1,671,230	0.24760010%
Mapleton Elem. School	767,307	0.11367987%
Marmarth Elem. School	149,300	0.02211940%
Max School	1,215,541	0.18008787%
May-Port C-G School	2,808,491	0.41609039%
Mcclusky School	657,329	0.09738620%
Mckenzie County	43,618	0.00646214%
Mckenzie County School	7,056,286	1.04542009%
Medina School	1,097,831	0.16264852%
Menoken Elem School	185,750	0.02751969%
Midkota	1,018,578	0.15090690%
Midway School	1,450,343	0.21487472%
Milnor School	1,367,470	0.20259668%
Minnewaukan School	1,585,917	0.23496071%
Minot School	44,924,000	6.65569004%
Minto School	1,303,951	0.19318614%
Mohall Lansford Sherwood	2,161,019	0.32016457%
Montpelier School	778,861	0.11539178%
Morton County	31,237	0.00462788%
Mott-Regent School	1,484,346	0.21991248%
Mt Pleasant School	1,656,986	0.24548985%
Munich School	966,811	0.14323741%
N Central Area Career And Tech Center	144,895	0.02146687%
Napoleon School	1,504,427	0.22288748%
Naughton Rural School	86,834	0.01286487%
Nd Center For Distance Education	1,330,154	0.19706822%
Nd Dept Of Public Instruction	265,274	0.03930153%
Nd School For Blind	688,156	0.10195337%
Nd School For Deaf	950,056	0.14075498%
Nd United	317,751	0.04707627%
Nd Youth Correctional Cnt	1,173,553	0.17386713%
Nedrose School	2,580,732	0.38234696%
Nelson County	12,758	0.00189017%
Nesson School	1,624,756	0.24071483%
New England School	1,428,877	0.21169447%
New Public School	2,070,817	0.30680074%

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
New Rockford Sheyenne School	1,651,393	0.24466113%
New Salem-Almont	1,917,867	0.28414058%
New Town School	4,668,667	0.69168375%
Newburg United District	692,764	0.10263609%
North Border School	2,827,925	0.41896968%
North Sargent School	1,525,095	0.22594954%
North Star	1,656,069	0.24535402%
North Valley Area Career	584,649	0.08661828%
Northern Cass School Dist	3,183,231	0.47160979%
Northern Plains Spec Ed	312,745	0.04633453%
Northwood School	1,640,472	0.24304322%
Oakes School	2,022,326	0.29961664%
Oberon Elem School	358,397	0.05309815%
Oliver - Mercer Spec Ed	944,212	0.13988925%
Page School	759,037	0.11245473%
Park River Area School District	2,149,932	0.31852194%
Parshall School	1,615,290	0.23931234%
Peace Garden Spec Ed	565,551	0.08378891%
Pembina Spec Ed Coop	110,240	0.01633255%
Pingree - Buchanan School	851,842	0.12620413%
Pleasant Valley Elem	-	0.00000000%
Powers Lake School	1,118,064	0.16564610%
Richardton-Taylor	1,782,325	0.26405936%
Richland School	1,572,912	0.23303384%
Robinson School	-	0.00000000%
Rolette County	-	0.00000000%
Rolette School	1,311,428	0.19429381%
Roosevelt School	356,717	0.05284922%
Roughrider Area Career And Tech Center	138,350	0.02049717%
Roughrider Service Program	305,382	0.04524370%
Rugby School	3,325,507	0.49268855%
Rural Cass Spec Ed	978,935	0.14503356%
Sargent Central School	1,527,882	0.22636255%
Sawyer School	728,354	0.10790880%
Scranton School	1,125,630	0.16676702%
Se Region Career And Tech	1,501,414	0.22244110%
Selfridge School	911,512	0.13504457%
Sheyenne Valley Area Voc	726,972	0.10770411%
Sheyenne Valley Spec Ed	1,459,724	0.21626459%
Slope County	25,266	0.00374328%
Solen - Cannonball School	1,677,607	0.24854496%
Souris Valley Spec Ed	1,018,717	0.15092752%
South Cent. Prairie Sp Ed	103,305	0.01530509%
South East Education Cooperative	695,641	0.10306229%
South Heart School	1,649,046	0.24431350%
South Prairie Elem School	2,346,109	0.34758639%
South Valley Spec Ed	391,778	0.05804359%
Southwest Special Education Unit	66,836	0.00990205%
St. John'S School	2,616,553	0.38765400%
St. Thomas School	645,932	0.09569773%
Stanley School	3,648,889	0.54059907%
Starkweather School	523,468	0.07755416%
Sterling School	263,715	0.03907055%
Strasburg School District	883,357	0.13087322%
Surrey School	2,424,969	0.35926997%
Sweet Briar Elem School	101,975	0.01510807%
Tgu School District	2,674,610	0.39625538%
Thompson School	2,268,089	0.33602738%
Tioga School	3,098,207	0.45901317%
Turtle Lake-Mercer School	1,252,411	0.18555022%
Twin Buttes Elem. School	429,535	0.06363749%
Underwood School	1,534,803	0.22738788%
United School	3,362,454	0.49816247%
Upper Valley Spec Ed	2,579,370	0.38214516%
Valley - Edinburg School	1,703,521	0.25238414%
Valley City School	6,180,721	0.91570123%
Velva School	2,630,057	0.38965467%
Wahpeton School	6,723,363	0.99609612%

EXHIBIT D

Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Ward County	28,762	0.00426119%
Warwick School	1,564,808	0.23183324%
Washburn School	1,649,938	0.24444569%
West Fargo School	58,724,231	8.70025548%
West River Student Services	713,428	0.10569747%
Westhope School	1,108,427	0.16421836%
White Shield School	1,394,346	0.20657853%
Williston School	19,030,364	2.81943282%
Wilmac Special Education	3,886,148	0.57575015%
Wilton School	1,373,628	0.20350914%
Wing School	726,757	0.10767223%
Wishek School	1,295,558	0.19194273%
Wolford School	538,733	0.07981571%
Wyndmere School	1,440,173	0.21336807%
Yellowstone Elem. School	536,378	0.07946680%
Zeeland School	398,922	0.05910207%
Grand Totals:	**674,971,342**	**100%**

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Alexander School	0.17806399%	$ 2,445,755	$ 1,201,881	$ 3,251,674	$ 2,445,755	$ 1,774,851	$ 153,240	$ (153,240)	$ -	12.75%	$ 234,195	$ 57,728	$ 291,923
Anamoose School	0.11321014%	1,554,970	764,136	2,067,361	1,554,970	1,128,421	97,427	(97,427)	-	12.75%	148,897	10,972	159,869
Apple Creek Elem School	0.05151764%	707,608	347,729	940,777	707,608	513,502	44,335	(44,335)	-	12.75%	67,758	(11,443)	56,315
Ashley School	0.14063328%	1,931,634	949,234	2,568,142	1,931,634	1,401,761	121,027	(121,027)	-	12.75%	184,965	(18,108)	166,857
Bakker Elem School	0.00562987%	77,328	38,000	102,809	77,328	56,116	4,845	(4,845)	-	12.75%	7,405	(216)	7,189
Barnes County North	0.24012753%	3,298,213	1,620,792	4,385,033	3,298,213	2,393,469	206,651	(206,651)	-	12.75%	315,823	(82,990)	232,833
Beach School	0.30984007%	4,255,733	2,091,332	5,658,073	4,255,733	3,088,328	266,645	(266,645)	-	12.75%	407,511	(75,839)	331,672
Belcourt School	1.24748965%	17,134,592	8,420,198	22,780,743	17,134,592	12,434,340	1,073,575	(1,073,575)	-	12.75%	1,640,736	(159,388)	1,481,348
Belfield Public School	0.22096375%	3,034,994	1,491,442	4,035,078	3,034,994	2,202,454	190,159	(190,159)	-	12.75%	290,618	2,535	293,153
Beulah School	0.50863139%	6,986,183	3,433,116	9,288,254	6,986,183	5,069,778	437,722	(437,722)	-	12.75%	668,967	(82,655)	586,312
Billings Co. School Dist.	0.12333776%	1,694,076	832,495	2,252,304	1,694,076	1,229,368	106,143	(106,143)	-	12.75%	162,218	(3,546)	158,672
Bismarck Public Schools	10.79080425%	148,214,475	72,834,836	197,053,773	148,214,475	107,557,232	9,286,444	(9,286,444)	-	12.75%	14,192,391	256,915	14,449,306
Bismarck State College	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(8,930)	(8,930)
Blessed John Paul II Catholic Sch Network	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(8,788)	(8,788)
Bottineau School	0.53898062%	7,403,038	3,637,965	9,842,470	7,403,038	5,372,284	463,841	(463,841)	-	12.75%	708,884	(115,372)	593,512
Bowbells School	0.09296183%	1,276,855	627,466	1,697,601	1,276,855	926,596	80,002	(80,002)	-	12.75%	122,266	10,016	132,282
Bowman School	0.42070099%	5,778,436	2,839,611	7,682,534	5,778,436	4,193,333	362,051	(362,051)	-	12.75%	553,319	(42,775)	510,544
Burke Central School	0.13875068%	1,905,776	936,527	2,533,763	1,905,776	1,382,996	119,407	(119,407)	-	12.75%	182,489	(8,996)	173,493
Burleigh County Spec. Ed.	0.01417803%	194,739	95,698	258,909	194,739	141,319	12,201	(12,201)	-	12.75%	18,647	4,301	22,948
Carrington School	0.42749362%	5,871,735	2,885,459	7,806,576	5,871,735	4,261,038	367,896	(367,896)	-	12.75%	562,253	(51,909)	510,344
Cavalier School	0.33393501%	4,586,683	2,253,966	6,098,077	4,586,683	3,328,494	287,381	(287,381)	-	12.75%	439,201	(11,868)	427,333
Center Stanton School	0.22226779%	3,052,905	1,500,244	4,058,892	3,052,905	2,215,452	191,281	(191,281)	-	12.75%	292,333	(8,657)	283,676
Central Cass School	0.53879722%	7,400,519	3,636,727	9,839,121	7,400,519	5,370,456	463,683	(463,683)	-	12.75%	708,642	(54,934)	653,708
Central Elementary School	0.00911657%	125,218	61,534	166,480	125,218	90,869	7,846	(7,846)	-	12.75%	11,990	(2,283)	9,707
Central Valley School	0.18835583%	2,587,116	1,271,348	3,439,616	2,587,116	1,877,435	162,097	(162,097)	-	12.75%	247,731	(34,761)	212,970
Dakota Prairie School	0.27978617%	3,842,935	1,888,476	5,109,250	3,842,935	2,788,766	240,781	(240,781)	-	12.75%	367,983	(6,110)	361,873
Devils Lake School	1.54383974%	21,205,036	10,420,476	28,192,472	21,205,036	15,388,207	1,328,611	(1,328,611)	-	12.75%	2,030,505	(280,227)	1,750,278
Dickinson School	2.86181591%	39,307,779	19,316,437	52,260,389	39,307,779	28,525,121	2,462,846	(2,462,846)	-	12.75%	3,763,947	443,922	4,207,869
Divide School	0.36843994%	5,060,617	2,486,864	6,728,181	5,060,617	3,672,421	317,075	(317,075)	-	12.75%	484,583	(3,879)	480,704
Drake School	0.06686508%	918,409	451,320	1,221,041	918,409	666,477	57,543	(57,543)	-	12.75%	87,943	(42,009)	45,934
Drayton School	0.20428277%	2,805,876	1,378,850	3,730,462	2,805,876	2,036,186	175,803	(175,803)	-	12.75%	268,679	32,955	301,634
Dunseith School	0.47419828%	6,513,235	3,200,702	8,659,462	6,513,235	4,726,567	408,090	(408,090)	-	12.75%	623,680	97,574	721,254
E Central Ctr Exc Childn	0.11849291%	1,627,531	799,793	2,163,831	1,627,531	1,181,077	101,974	(101,974)	-	12.75%	155,845	(18,992)	136,853
Earl Elem. School	0.00472613%	64,915	31,900	86,305	64,915	47,108	4,067	(4,067)	-	12.75%	6,216	(894)	5,322
Edgeley School	0.19442995%	2,670,545	1,312,346	3,550,538	2,670,545	1,937,979	167,324	(167,324)	-	12.75%	255,720	(9,309)	246,411
Edmore School	0.10408017%	1,429,568	702,511	1,900,636	1,429,568	1,037,418	89,570	(89,570)	-	12.75%	136,889	(9,993)	126,896
Eight Mile School	0.22749741%	3,124,736	1,535,542	4,154,391	3,124,736	2,267,578	195,782	(195,782)	-	12.75%	299,211	34,872	334,083
Elgin-New Leipzig School	0.17669820%	2,426,995	1,192,662	3,226,733	2,426,995	1,761,238	152,064	(152,064)	-	12.75%	232,399	19,855	252,254
Ellendale School	0.25362188%	3,483,562	1,711,875	4,631,457	3,483,562	2,527,974	218,264	(218,264)	-	12.75%	333,571	(68,006)	265,565
Emerado Elementary School	0.08940345%	1,227,979	603,448	1,632,620	1,227,979	891,128	76,940	(76,940)	-	12.75%	117,586	(3,892)	113,694
Enderlin Area School District	0.31327299%	4,302,885	2,114,503	5,720,762	4,302,885	3,122,545	269,599	(269,599)	-	12.75%	412,026	5,599	417,625
Fairmount School	0.14915754%	2,048,717	1,006,771	2,723,806	2,048,717	1,486,726	128,363	(128,363)	-	12.75%	196,176	(21,047)	175,129
Fargo Public Schools	10.41096235%	142,997,249	70,271,012	190,117,378	142,997,249	103,771,162	8,959,556	(8,959,556)	-	12.75%	13,692,812	(819,446)	12,873,366
Fessenden-Bowdon School	0.15993316%	2,196,723	1,079,503	2,920,582	2,196,723	1,594,132	137,637	(137,637)	-	12.75%	210,349	10,774	221,123
Finley-Sharon School	0.14850105%	2,039,700	1,002,340	2,711,818	2,039,700	1,480,183	127,798	(127,798)	-	12.75%	195,313	(65,769)	129,544
Flasher School	0.17332245%	2,380,628	1,169,877	3,165,088	2,380,628	1,727,590	149,159	(149,159)	-	12.75%	227,959	(12,420)	215,539
Fordville Lankin School	0.08755230%	1,202,553	590,953	1,598,816	1,202,553	872,677	75,347	(75,347)	-	12.75%	115,151	(10,294)	104,857
Fort Ransom Elem School	0.02438796%	334,975	164,612	445,355	334,975	243,087	20,988	(20,988)	-	12.75%	32,076	(3,029)	29,047
Fort Totten School	0.23045523%	3,165,362	1,555,507	4,208,405	3,165,362	2,297,060	198,327	(198,327)	-	12.75%	303,102	(55,189)	247,913
Fort Yates School	0.19610793%	2,693,593	1,323,672	3,581,180	2,693,593	1,954,704	168,768	(168,768)	-	12.75%	257,927	36,170	294,097
Gackle-Streeter Pub Sch	0.11764958%	1,615,947	794,101	2,148,431	1,615,947	1,172,671	101,248	(101,248)	-	12.75%	154,736	(9,308)	145,428
Garrison School	0.34658000%	4,760,366	2,339,316	6,328,990	4,760,366	3,454,533	298,263	(298,263)	-	12.75%	455,832	(8,499)	447,333
Glen Ullin School	0.17579406%	2,414,577	1,186,560	3,210,223	2,414,577	1,752,226	151,286	(151,286)	-	12.75%	231,210	8,669	239,879
Glenburn School	0.27729355%	3,808,698	1,871,652	5,063,732	3,808,698	2,763,921	238,636	(238,636)	-	12.75%	364,705	33,106	397,811
Goodrich School	0.04279276%	587,770	288,839	781,450	587,770	426,536	36,827	(36,827)	-	12.75%	56,282	(8,315)	47,967
Grafton School	0.66644086%	9,153,737	4,498,285	12,170,055	9,153,737	6,642,743	573,531	(573,531)	-	12.75%	876,523	(38,563)	837,960
Grand Forks School	7.05998058%	96,970,651	47,652,846	128,924,200	96,970,651	70,370,285	6,075,739	(6,075,739)	-	12.75%	9,285,499	(223,631)	9,061,868
Great North West Cooperative	0.02045539%	280,960	138,068	373,541	280,960	203,889	17,604	(17,604)	-	12.75%	26,904	(3,255)	23,649
Grenora School	0.17287041%	2,374,420	1,166,826	3,156,833	2,374,420	1,723,084	148,770	(148,770)	-	12.75%	227,364	9,158	236,522
Griggs County Central Sch	0.24537163%	3,370,243	1,656,188	4,480,797	3,370,243	2,445,739	211,164	(211,164)	-	12.75%	322,720	(75,820)	246,900
Gst Educational Services	0.25101030%	3,447,691	1,694,248	4,583,766	3,447,691	2,501,943	216,017	(216,017)	-	12.75%	330,136	3,915	334,051
Halliday School	0.05830853%	800,883	393,566	1,064,788	800,883	581,190	50,180	(50,180)	-	12.75%	76,689	(22,742)	53,947
Hankinson School	0.21833944%	2,998,948	1,473,729	3,987,155	2,998,948	2,176,296	187,900	(187,900)	-	12.75%	287,167	(82,519)	204,648
Harvey School	0.34707023%	4,767,099	2,342,625	6,337,943	4,767,099	3,459,419	298,685	(298,685)	-	12.75%	456,477	(22,206)	434,271
Hatton Eielson Psd	0.17132285%	2,353,163	1,156,380	3,128,573	2,353,163	1,707,659	147,439	(147,439)	-	12.75%	225,329	(17,871)	207,458
Hazelton - Moffit School	0.12757313%	1,752,250	861,082	2,329,647	1,752,250	1,271,584	109,788	(109,788)	-	12.75%	167,788	(6,957)	160,831
Hazen School	0.43287744%	5,945,683	2,921,799	7,904,891	5,945,683	4,314,702	372,529	(372,529)	-	12.75%	569,333	(20,329)	549,004
Hebron School	0.17961834%	2,467,104	1,212,372	3,280,059	2,467,104	1,790,344	154,578	(154,578)	-	12.75%	236,239	(13,846)	222,393

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Hettinger School	0.20900929%	2,870,796	1,410,753	3,816,775	2,870,796	2,083,298	179,871	(179,871)	-	12.75%	274,895	(93,312)	181,583
Hillsboro School	0.38280913%	5,257,982	2,583,852	6,990,580	5,257,982	3,815,646	329,441	(329,441)	-	12.75%	503,482	29,025	532,507
Hope School	0.09303746%	1,277,893	627,976	1,698,982	1,277,893	927,350	80,067	(80,067)	-	12.75%	122,366	(14,983)	107,383
Horse Creek Elem. School	0.00980783%	134,713	66,200	179,103	134,713	97,759	8,441	(8,441)	-	12.75%	12,900	6,883	19,783
James River Multidistrict Spec Ed Unit	0.21295939%	2,925,052	1,437,415	3,888,909	2,925,052	2,122,671	183,270	(183,270)	-	12.75%	280,091	29,872	309,963
Jamestown School	1.99659878%	27,423,798	13,476,470	36,460,426	27,423,798	19,901,078	1,718,250	(1,718,250)	-	12.75%	2,625,987	(289,585)	2,336,402
Kenmare School	0.26952871%	3,702,046	1,819,242	4,921,936	3,702,046	2,686,525	231,953	(231,953)	-	12.75%	354,492	(39,947)	314,545
Kensal School	0.04300719%	590,715	290,286	785,366	590,715	428,674	37,012	(37,012)	-	12.75%	56,564	(38,028)	18,536
Kidder County School District	0.30799522%	4,230,394	2,078,879	5,624,383	4,230,394	3,069,939	265,057	(265,057)	-	12.75%	405,085	(100,230)	304,855
Killdeer School	0.40455446%	5,556,660	2,730,627	7,387,678	5,556,660	4,032,392	348,155	(348,155)	-	12.75%	532,082	6,691	538,773
Kindred School	0.48606317%	6,676,203	3,280,787	8,876,130	6,676,203	4,844,830	418,300	(418,300)	-	12.75%	639,285	(30,426)	608,859
Kulm School	0.14888031%	2,044,909	1,004,899	2,718,743	2,044,909	1,483,963	128,125	(128,125)	-	12.75%	195,812	(47,704)	148,108
Lake Region Spec Ed	0.25520199%	3,505,265	1,722,540	4,660,312	3,505,265	2,543,723	219,624	(219,624)	-	12.75%	335,649	(56,411)	279,238
Lakota School	0.17572653%	2,413,649	1,186,104	3,208,989	2,413,649	1,751,552	151,228	(151,228)	-	12.75%	231,121	(33,726)	197,395
Lamoure School	0.23255360%	3,194,184	1,569,670	4,246,724	3,194,184	2,317,976	200,133	(200,133)	-	12.75%	305,862	(14,924)	290,938
Langdon Area School	0.33802342%	4,642,839	2,281,561	6,172,736	4,642,839	3,369,245	290,899	(290,899)	-	12.75%	444,579	7,073	451,652
Larimore School	0.31946590%	4,387,946	2,156,303	5,833,853	4,387,946	3,184,273	274,929	(274,929)	-	12.75%	420,171	(61,668)	358,503
Leeds School	0.15988182%	2,196,018	1,079,156	2,919,645	2,196,018	1,593,620	137,592	(137,592)	-	12.75%	210,281	(21,314)	188,967
Lewis And Clark School	0.41009581%	5,632,772	2,768,029	7,488,870	5,632,772	4,087,626	352,924	(352,924)	-	12.75%	539,370	7,030	546,400
Lidgerwood School	0.17810005%	2,446,250	1,202,124	3,252,333	2,446,250	1,775,210	153,271	(153,271)	-	12.75%	234,243	(14,835)	219,408
Linton School	0.24166663%	3,319,353	1,631,180	4,413,139	3,319,353	2,408,810	207,976	(207,976)	-	12.75%	317,847	(52,011)	265,836
Lisbon School	0.52121244%	7,158,987	3,518,035	9,518,000	7,158,987	5,195,180	448,550	(448,550)	-	12.75%	685,514	(56,405)	629,109
Litchville-Marion School	0.13143247%	1,805,259	887,132	2,400,124	1,805,259	1,310,052	113,109	(113,109)	-	12.75%	172,864	(12,709)	160,155
Little Heart Elem. School	0.01807484%	248,263	122,000	330,070	248,263	180,161	15,555	(15,555)	-	12.75%	23,773	3,337	27,110
Logan County	0.00060436%	8,301	4,079	11,036	8,301	6,024	520	(520)	-	12.75%	795	(142)	653
Lone Tree Elem. School	0.03382781%	464,634	228,328	617,739	464,634	337,178	29,112	(29,112)	-	12.75%	44,491	115	44,606
Lonetree Spec Ed Unit	0.02372844%	325,916	160,160	433,311	325,916	236,513	20,420	(20,420)	-	12.75%	31,208	(174)	31,034
Maddock School	0.14277037%	1,960,988	963,659	2,607,168	1,960,988	1,423,062	122,867	(122,867)	-	12.75%	187,776	(26,145)	161,631
Mandan Public Schools	2.98327186%	40,976,007	20,136,230	54,478,328	40,976,007	29,735,732	2,567,370	(2,567,370)	-	12.75%	3,923,689	270,408	4,194,097
Mandaree School	0.21832065%	2,998,690	1,473,602	3,986,812	2,998,690	2,176,109	187,884	(187,884)	-	12.75%	287,142	(99,400)	187,742
Manning Elem School	0.01451045%	199,305	97,941	264,979	199,305	144,633	12,488	(12,488)	-	12.75%	19,085	4,806	23,891
Manvel Elem. School	0.12489308%	1,715,439	842,992	2,280,706	1,715,439	1,244,871	107,482	(107,482)	-	12.75%	164,263	(2,608)	161,655
Maple Valley School	0.24760010%	3,400,851	1,671,230	4,521,492	3,400,851	2,467,951	213,082	(213,082)	-	12.75%	325,651	(28,006)	297,645
Mapleton Elem. School	0.11367987%	1,561,422	767,307	2,075,939	1,561,422	1,133,103	97,832	(97,832)	-	12.75%	149,515	10,670	160,185
Marmarth Elem. School	0.02211940%	303,816	149,300	403,928	303,816	220,475	19,036	(19,036)	-	12.75%	29,092	(7,268)	21,824
Max School	0.18008787%	2,473,553	1,215,541	3,288,633	2,473,553	1,795,024	154,982	(154,982)	-	12.75%	236,857	(5,828)	231,029
May-Port C-G School	0.41609039%	5,715,109	2,808,491	7,598,338	5,715,109	4,147,377	358,083	(358,083)	-	12.75%	547,255	(2,262)	544,993
Mcclusky School	0.09738620%	1,337,625	657,329	1,778,396	1,337,625	970,696	83,809	(83,809)	-	12.75%	128,085	(48,557)	79,528
Mckenzie County	0.00646214%	88,759	43,618	118,007	88,759	64,411	5,561	(5,561)	-	12.75%	8,499	(4,141)	4,358
Mckenzie County School	1.04542009%	14,359,114	7,056,286	19,090,697	14,359,114	10,420,214	899,677	(899,677)	-	12.75%	1,374,968	464,647	1,839,615
Medina School	0.16264852%	2,234,019	1,097,831	2,970,168	2,234,019	1,621,197	139,973	(139,973)	-	12.75%	213,920	8,501	222,421
Menoken Elem School	0.02751969%	377,990	185,750	502,544	377,990	274,302	23,683	(23,683)	-	12.75%	36,195	12,825	49,020
Midkota	0.15090690%	2,072,745	1,018,578	2,755,751	2,072,745	1,504,163	129,869	(129,869)	-	12.75%	198,477	(35,801)	162,676
Midway School	0.21487472%	2,951,360	1,450,343	3,923,885	2,951,360	2,141,762	184,919	(184,919)	-	12.75%	282,610	(25,705)	256,905
Milnor School	0.20259668%	2,782,718	1,367,470	3,699,672	2,782,718	2,019,380	174,352	(174,352)	-	12.75%	266,461	(63,494)	202,967
Minnewaukan School	0.23496071%	3,227,246	1,585,917	4,290,681	3,227,246	2,341,968	202,205	(202,205)	-	12.75%	309,027	(74,079)	234,948
Minot School	6.65569004%	91,417,617	44,924,000	121,541,342	91,417,617	66,340,523	5,727,812	(5,727,812)	-	12.75%	8,753,764	(429,649)	8,324,115
Minto School	0.19318614%	2,653,461	1,303,951	3,527,824	2,653,461	1,925,581	166,254	(166,254)	-	12.75%	254,084	17,009	271,093
Mohall Lansford Sherwood	0.32016457%	4,397,543	2,161,019	5,846,611	4,397,543	3,191,237	275,530	(275,530)	-	12.75%	421,090	(103,743)	317,347
Montpelier School	0.11539178%	1,584,936	778,861	2,107,200	1,584,936	1,150,166	99,305	(99,305)	-	12.75%	151,767	2,937	154,704
Morton County	0.00462788%	63,565	31,237	84,511	63,565	46,128	3,983	(3,983)	-	12.75%	6,087	270	6,357
Mott-Regent School	0.21991248%	3,020,555	1,484,346	4,015,881	3,020,555	2,191,975	189,254	(189,254)	-	12.75%	289,236	(48,199)	241,037
Mt Pleasant School	0.24548985%	3,371,866	1,656,986	4,482,956	3,371,866	2,446,918	211,266	(211,266)	-	12.75%	322,876	(5,006)	317,870
Munich School	0.14323741%	1,967,403	966,811	2,615,697	1,967,403	1,427,717	123,268	(123,268)	-	12.75%	188,390	22,950	211,340
N Central Area Career And Tech Center	0.02146687%	294,853	144,895	392,012	294,853	213,971	18,474	(18,474)	-	12.75%	28,234	(3,888)	24,346
Napoleon School	0.22288748%	3,061,417	1,504,427	4,070,208	3,061,417	2,221,629	191,814	(191,814)	-	12.75%	293,148	(28,442)	264,706
Naughton Rural School	0.01286487%	176,702	86,834	234,929	176,702	128,230	11,071	(11,071)	-	12.75%	16,920	2,733	19,653
Nd Center For Distance Education	0.19706822%	2,706,783	1,330,154	3,598,716	2,706,783	1,964,275	169,595	(169,595)	-	12.75%	259,190	74,014	333,204
Nd Dept Of Public Instruction	0.03930153%	539,817	265,274	717,696	539,817	391,738	33,822	(33,822)	-	12.75%	51,691	34,684	86,375
Nd School For Blind	0.10195337%	1,400,356	688,156	1,861,798	1,400,356	1,016,219	87,740	(87,740)	-	12.75%	134,092	(15,046)	119,046
Nd School For Deaf	0.14075498%	1,933,306	950,056	2,570,364	1,933,306	1,402,974	121,132	(121,132)	-	12.75%	185,125	1,695	186,820
Nd United	0.04707627%	646,605	317,751	859,672	646,605	469,232	40,513	(40,513)	-	12.75%	61,916	(5,927)	55,989
Nd Youth Correctional Cnt	0.17386713%	2,388,110	1,173,553	3,175,034	2,388,110	1,733,019	149,628	(149,628)	-	12.75%	228,675	(36,384)	192,291
Nedrose School	0.38234696%	5,251,634	2,580,732	6,982,140	5,251,634	3,811,039	329,043	(329,043)	-	12.75%	502,874	263,648	766,522
Nelson County	0.00189017%	25,962	12,758	34,517	25,962	18,840	1,627	(1,627)	-	12.75%	2,486	102	2,588
Nesson School	0.24071483%	3,306,280	1,624,756	4,395,758	3,306,280	2,399,323	207,156	(207,156)	-	12.75%	316,595	14,291	330,886
New England School	0.21169447%	2,907,678	1,428,877	3,865,810	2,907,678	2,110,062	182,182	(182,182)	-	12.75%	278,427	40,228	318,655
New Public School	0.30680074%	4,213,987	2,070,817	5,602,571	4,213,987	3,058,033	264,029	(264,029)	-	12.75%	403,514	(62,224)	341,290

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
New Rockford Sheyenne School	0.24466113%	3,360,484	1,651,393	4,467,823	3,360,484	2,438,657	210,553	(210,553)	-	12.75%	321,786	(61,400)	260,386
New Salem-Almont	0.28414058%	3,902,744	1,917,867	5,188,767	3,902,744	2,832,168	244,528	(244,528)	-	12.75%	373,710	30,644	404,354
New Town School	0.69168375%	9,500,454	4,668,667	12,631,023	9,500,454	6,894,351	595,255	(595,255)	-	12.75%	909,723	69,061	978,784
Newburg United District	0.10263609%	1,409,733	692,764	1,874,265	1,409,733	1,023,024	88,327	(88,327)	-	12.75%	134,990	4,224	139,214
North Border School	0.41896968%	5,754,656	2,827,925	7,650,918	5,754,656	4,176,076	360,561	(360,561)	-	12.75%	551,042	(64,449)	486,593
North Sargent School	0.22594954%	3,103,475	1,525,095	4,126,125	3,103,475	2,252,150	194,450	(194,450)	-	12.75%	297,176	34,457	331,633
North Star	0.24535402%	3,370,001	1,656,069	4,480,476	3,370,001	2,445,564	211,149	(211,149)	-	12.75%	322,697	(2,652)	320,045
North Valley Area Career	0.08661828%	1,189,724	584,649	1,581,760	1,189,724	863,367	74,543	(74,543)	-	12.75%	113,923	(23,711)	90,212
Northern Cass School Dist	0.47160979%	6,477,682	3,183,231	8,612,193	6,477,682	4,700,766	405,862	(405,862)	-	12.75%	620,275	106,252	726,527
Northern Plains Spec Ed	0.04633453%	636,417	312,745	846,127	636,417	461,839	39,875	(39,875)	-	12.75%	60,941	23,514	84,455
Northwood School	0.24304322%	3,338,261	1,640,472	4,438,277	3,338,261	2,422,531	209,160	(209,160)	-	12.75%	319,658	33,902	353,560
Oakes School	0.29961664%	4,115,312	2,022,326	5,471,380	4,115,312	2,986,426	257,847	(257,847)	-	12.75%	394,065	(47,406)	346,659
Oberon Elem School	0.05309815%	729,317	358,397	969,640	729,317	529,255	45,696	(45,696)	-	12.75%	69,836	(36,415)	33,421
Oliver - Mercer Spec Ed	0.13988925%	1,921,415	944,212	2,554,555	1,921,415	1,394,345	120,387	(120,387)	-	12.75%	183,987	(13,232)	170,755
Page School	0.11245473%	1,544,595	759,037	2,053,566	1,544,595	1,120,891	96,777	(96,777)	-	12.75%	147,904	(3,531)	144,373
Park River Area School District	0.31852194%	4,374,981	2,149,932	5,816,615	4,374,981	3,174,864	274,116	(274,116)	-	12.75%	418,930	(41,841)	377,089
Parshall School	0.23931234%	3,287,017	1,615,290	4,370,147	3,287,017	2,385,343	205,949	(205,949)	-	12.75%	314,751	(76,494)	238,257
Peace Garden Spec Ed	0.08378891%	1,150,862	565,551	1,530,092	1,150,862	835,165	72,108	(72,108)	-	12.75%	110,202	13,874	124,076
Pembina Spec Ed Coop	0.01633255%	224,332	110,240	298,253	224,332	162,795	14,056	(14,056)	-	12.75%	21,481	(20,888)	593
Pingree - Buchanan School	0.12620413%	1,733,446	851,842	2,304,647	1,733,446	1,257,938	108,610	(108,610)	-	12.75%	165,987	(7,843)	158,144
Pleasant Valley Elem	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(4,753)	(4,753)
Powers Lake School	0.16564610%	2,275,192	1,118,064	3,024,908	2,275,192	1,651,076	142,553	(142,553)	-	12.75%	217,863	5,750	223,613
Richardton-Taylor	0.26405936%	3,626,923	1,782,325	4,822,059	3,626,923	2,632,009	227,246	(227,246)	-	12.75%	347,299	(3,447)	343,852
Richland School	0.23303384%	3,200,780	1,572,912	4,255,494	3,200,780	2,322,762	200,546	(200,546)	-	12.75%	306,493	(43,233)	263,260
Robinson School	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(20,228)	(20,228)
Rolette County	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(1,137)	(1,137)
Rolette School	0.19429381%	2,668,676	1,311,428	3,548,051	2,668,676	1,936,622	167,207	(167,207)	-	12.75%	255,541	29,044	284,585
Roosevelt School	0.05284922%	725,898	356,717	965,094	725,898	526,774	45,481	(45,481)	-	12.75%	69,509	(22,780)	46,729
Roughrider Area Career And Tech Center	0.02049717%	281,534	138,350	374,304	281,534	204,305	17,640	(17,640)	-	12.75%	26,958	(11,279)	15,679
Roughrider Service Program	0.04524370%	621,434	305,382	826,207	621,434	450,966	38,936	(38,936)	-	12.75%	59,506	50,097	109,603
Rugby School	0.49268855%	6,767,204	3,325,507	8,997,118	6,767,204	4,910,868	424,002	(424,002)	-	12.75%	647,999	(13,564)	634,435
Rural Cass Spec Ed	0.14503356%	1,992,073	978,935	2,648,497	1,992,073	1,445,621	124,814	(124,814)	-	12.75%	190,753	(47,194)	143,559
Sargent Central School	0.22636255%	3,109,148	1,527,882	4,133,667	3,109,148	2,256,266	194,805	(194,805)	-	12.75%	297,719	(2,587)	295,132
Sawyer School	0.10790880%	1,482,155	728,354	1,970,552	1,482,155	1,075,580	92,865	(92,865)	-	12.75%	141,925	(50,936)	90,989
Scranton School	0.16676702%	2,290,588	1,125,630	3,045,377	2,290,588	1,662,249	143,518	(143,518)	-	12.75%	219,337	(9,771)	209,566
Se Region Career And Tech	0.22244110%	3,055,286	1,501,414	4,062,057	3,055,286	2,217,179	191,430	(191,430)	-	12.75%	292,561	9,583	302,144
Selfridge School	0.13504457%	1,854,872	911,512	2,466,085	1,854,872	1,346,055	116,218	(116,218)	-	12.75%	177,615	(521)	177,094
Sheyenne Valley Area Voc	0.10770411%	1,479,344	726,972	1,966,814	1,479,344	1,073,540	92,689	(92,689)	-	12.75%	141,656	(14,631)	127,025
Sheyenne Valley Spec Ed	0.21626459%	2,970,450	1,459,724	3,949,266	2,970,450	2,155,615	186,115	(186,115)	-	12.75%	284,438	(66,016)	218,422
Slope County	0.00374328%	51,415	25,266	68,357	51,415	37,311	3,221	(3,221)	-	12.75%	4,923	(313)	4,610
Solen - Cannonball School	0.24854496%	3,413,829	1,677,607	4,538,746	3,413,829	2,477,369	213,895	(213,895)	-	12.75%	326,894	(56,615)	270,279
Souris Valley Spec Ed	0.15092752%	2,073,028	1,018,717	2,756,128	2,073,028	1,504,369	129,887	(129,887)	-	12.75%	198,504	(175,275)	23,229
South Cent. Prairie Sp Ed	0.01530509%	210,219	103,305	279,490	210,219	152,553	13,171	(13,171)	-	12.75%	20,130	(1,105)	19,025
South East Education Cooperative	0.10306229%	1,415,587	695,641	1,882,048	1,415,587	1,027,272	88,694	(88,694)	-	12.75%	135,551	179,758	315,309
South Heart School	0.24431350%	3,355,709	1,649,046	4,461,474	3,355,709	2,435,192	210,253	(210,253)	-	12.75%	321,328	53,387	374,715
South Prairie Elem School	0.34758639%	4,774,189	2,346,109	6,347,368	4,774,189	3,464,564	299,129	(299,129)	-	12.75%	457,156	239,795	696,951
South Valley Spec Ed	0.05804359%	797,244	391,778	1,059,950	797,244	578,549	49,952	(49,952)	-	12.75%	76,341	(84,619)	(8,278)
Southwest Special Education Unit	0.00990205%	136,007	66,836	180,824	136,007	98,699	8,522	(8,522)	-	12.75%	13,023	(811)	12,212
St. John'S School	0.38765400%	5,324,528	2,616,553	7,079,054	5,324,528	3,863,937	333,611	(333,611)	-	12.75%	509,854	(5,942)	503,912
St. Thomas School	0.09569773%	1,314,433	645,932	1,747,562	1,314,433	953,866	82,356	(82,356)	-	12.75%	125,865	(23,192)	102,673
Stanley School	0.54059907%	7,425,267	3,648,889	9,872,025	7,425,267	5,388,416	465,233	(465,233)	-	12.75%	711,012	96,521	807,533
Starkweather School	0.07755416%	1,065,226	523,468	1,416,237	1,065,226	773,020	66,742	(66,742)	-	12.75%	102,002	(31,011)	70,991
Sterling School	0.03907055%	536,644	263,715	713,478	536,644	389,435	33,624	(33,624)	-	12.75%	51,387	6,211	57,598
Strasburg School District	0.13087322%	1,797,577	883,357	2,389,911	1,797,577	1,304,477	112,628	(112,628)	-	12.75%	172,128	(14,600)	157,528
Surrey School	0.35926997%	4,934,666	2,424,969	6,560,725	4,934,666	3,581,020	309,184	(309,184)	-	12.75%	472,523	(14,996)	457,527
Sweet Briar Elem School	0.01510807%	207,513	101,975	275,893	207,513	150,590	13,002	(13,002)	-	12.75%	19,871	4,663	24,534
Tgu School District	0.39625538%	5,442,670	2,674,610	7,236,126	5,442,670	3,949,671	341,013	(341,013)	-	12.75%	521,167	(58,333)	462,834
Thompson School	0.33602738%	4,615,423	2,268,089	6,136,286	4,615,423	3,349,350	289,181	(289,181)	-	12.75%	441,953	26,008	467,961
Tioga School	0.45901317%	6,304,664	3,098,207	8,382,163	6,304,664	4,575,209	395,022	(395,022)	-	12.75%	603,708	90,182	693,890
Turtle Lake-Mercer School	0.18555022%	2,548,580	1,252,411	3,388,382	2,548,580	1,849,470	159,682	(159,682)	-	12.75%	244,041	(36,288)	207,753
Twin Buttes Elem. School	0.06363749%	874,077	429,535	1,162,101	874,077	634,306	54,766	(54,766)	-	12.75%	83,698	(20,390)	63,308
Underwood School	0.22738788%	3,123,231	1,534,803	4,152,391	3,123,231	2,266,486	195,687	(195,687)	-	12.75%	299,067	(30,958)	268,109
United School	0.49816247%	6,842,390	3,362,454	9,097,079	6,842,390	4,965,429	428,713	(428,713)	-	12.75%	655,198	38,041	693,239
Upper Valley Spec Ed	0.38214516%	5,248,862	2,579,370	6,978,455	5,248,862	3,809,028	328,870	(328,870)	-	12.75%	502,609	31,010	533,619
Valley - Edinburg School	0.25238414%	3,466,561	1,703,521	4,608,855	3,466,561	2,515,636	217,199	(217,199)	-	12.75%	331,943	17,183	349,126
Valley City School	0.91570123%	12,577,392	6,180,721	16,721,866	12,577,392	9,127,243	788,042	(788,042)	-	12.75%	1,204,358	(147,400)	1,056,958
Velva School	0.38965467%	5,352,007	2,630,057	7,115,589	5,352,007	3,883,879	335,332	(335,332)	-	12.75%	512,486	(15,289)	497,197
Wahpeton School	0.99609612%	13,681,637	6,723,363	18,189,979	13,681,637	9,928,578	857,229	(857,229)	-	12.75%	1,310,096	(133,754)	1,176,342

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Ward County	0.00426119%	58,529	28,762	77,815	58,529	42,473	3,667	(3,667)	-	12.75%	5,604	(385)	5,219
Warwick School	0.23183324%	3,184,289	1,564,808	4,233,569	3,184,289	2,310,795	199,513	(199,513)	-	12.75%	304,914	(53,908)	251,006
Washburn School	0.24444569%	3,357,525	1,649,938	4,463,888	3,357,525	2,436,510	210,367	(210,367)	-	12.75%	321,502	(3,943)	317,559
West Fargo School	8.70025548%	119,500,250	58,724,231	158,877,701	119,500,250	86,719,708	7,487,341	(7,487,341)	-	12.75%	11,442,838	2,039,453	13,482,291
West River Student Services	0.10569747%	1,451,782	713,428	1,930,170	1,451,782	1,053,538	90,962	(90,962)	-	12.75%	139,017	10,136	149,153
Westhope School	0.16421836%	2,255,581	1,108,427	2,998,836	2,255,581	1,636,845	141,324	(141,324)	-	12.75%	215,985	4,707	220,692
White Shield School	0.20657853%	2,837,409	1,394,346	3,772,386	2,837,409	2,059,069	177,779	(177,779)	-	12.75%	271,698	(50,224)	221,474
Williston School	2.81943282%	38,725,636	19,030,364	51,486,420	38,725,636	28,102,668	2,426,372	(2,426,372)	-	12.75%	3,708,203	705,923	4,414,126
Wilmac Special Education	0.57575015%	7,908,077	3,886,148	10,513,928	7,908,077	5,738,784	495,484	(495,484)	-	12.75%	757,244	255,473	1,012,717
Wilton School	0.20350914%	2,795,250	1,373,628	3,716,335	2,795,250	2,028,475	175,138	(175,138)	-	12.75%	267,661	13,837	281,498
Wing School	0.10767223%	1,478,906	726,757	1,966,231	1,478,906	1,073,222	92,662	(92,662)	-	12.75%	141,614	(802)	140,812
Wishek School	0.19194273%	2,636,383	1,295,558	3,505,118	2,636,383	1,913,187	165,184	(165,184)	-	12.75%	252,449	6,969	259,418
Wolford School	0.07981571%	1,096,289	538,733	1,457,536	1,096,289	795,562	68,688	(68,688)	-	12.75%	104,976	1,337	106,313
Wyndmere School	0.21336807%	2,930,665	1,440,173	3,896,372	2,930,665	2,126,744	183,622	(183,622)	-	12.75%	280,628	(36,698)	243,930
Yellowstone Elem. School	0.07946680%	1,091,497	536,378	1,451,165	1,091,497	792,085	68,388	(68,388)	-	12.75%	104,517	156	104,673
Zeeland School	0.05910207%	811,782	398,922	1,079,279	811,782	589,099	50,863	(50,863)	-	12.75%	77,733	(29,688)	48,045
Grand Totals:	**100%**	**1,373,525,753**	**674,971,342**	**1,826,126,843**	**1,373,525,753**	**996,748,988**	**86,058,868**	**(86,058,868)**	**-**	**12.75%**	**131,523,017**	**-**	**131,523,017**

Note: Columns may not foot due to rounding.

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

	Deferred Outflows of Resources					Deferred Inflows of Resources				Deferred (Inflows)/Outflows Recognized In Future Pension Expense (Year Ended June 30):					
Employer Name	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	2018	2019	2020	2021	2022	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Alexander School	$ 9,381	$ 33,783	$ 174,324	$ 296,261	$ 513,749	$ 26,699	$ -	$ 28,869	$ 55,568	$ 98,704	$ 151,694	$ 118,517	$ 60,310	$ 36,499	$ (7,543)
Anamoose School	5,964	21,479	110,832	69,654	207,929	16,975	-	23,042	40,017	37,024	70,714	49,621	12,612	(3,987)	1,929
Apple Creek Elem School	2,714	9,774	50,436	7,656	70,580	7,725	-	57,530	65,255	412	15,743	6,145	(10,696)	(2,671)	(3,608)
Ashley School	7,409	26,681	137,680	11,217	182,987	21,086	-	114,553	135,639	14,255	56,105	29,902	(16,065)	(24,698)	(12,148)
Bakker Elem School	297	1,068	5,512	3,348	10,225	844	-	3,592	4,436	1,080	2,755	1,706	(133)	(91)	472
Barnes County North	12,651	45,558	235,084	-	293,293	36,005	-	387,015	423,020	(27,731)	43,728	(1,013)	(79,501)	(54,305)	(10,903)
Beach School	16,324	58,784	303,333	-	378,441	46,457	-	382,798	429,255	(4,538)	87,667	29,937	(71,342)	(54,177)	(38,362)
Belcourt School	65,723	236,677	1,221,290	-	1,523,690	187,048	-	794,365	981,413	127,687	498,924	266,491	(141,277)	(135,204)	(74,344)
Belfield Public School	11,641	41,922	216,323	70,799	340,685	33,131	-	72,666	105,797	53,384	119,140	77,970	5,745	(5,846)	(15,504)
Beulah School	26,797	96,499	497,949	-	621,245	76,264	-	433,667	509,931	34,392	185,755	90,986	(75,270)	(85,104)	(39,445)
Billings Co. School Dist.	6,498	23,400	120,747	185,897	336,542	18,493	-	153,603	172,096	24,837	61,541	38,560	(1,754)	31,532	9,731
Bismarck Public Schools	568,507	2,047,258	10,564,175	2,369,002	15,548,942	1,617,968	-	1,080,312	2,698,280	2,740,116	5,951,328	3,940,776	413,568	(267,972)	72,847
Bismarck State College	-	0	-	-	-	-	-	35,718	35,718	(8,930)	(8,930)	(8,930)	(8,928)	-	-
Blessed John Paul II Catholic Sch Network	-	0	-	-	-	-	-	43,516	43,516	(8,788)	(8,788)	(8,788)	(8,785)	(8,367)	-
Bottineau School	28,396	102,257	527,661	-	658,314	80,815	-	633,884	714,699	8,659	169,053	68,630	(107,548)	(117,729)	(77,451)
Bowbells School	4,898	17,637	91,009	84,043	197,587	13,939	-	16,342	30,281	31,409	59,073	41,752	11,368	11,598	12,108
Bowman School	22,164	79,816	411,865	-	513,845	63,080	-	215,919	278,999	54,038	179,233	100,848	(36,670)	(49,494)	(13,107)
Burke Central School	7,310	26,324	135,837	213,967	383,438	20,804	-	235,796	256,600	22,934	64,224	38,372	(6,983)	24,738	(16,448)
Burleigh County Spec. Ed.	747	2,690	13,880	27,109	44,426	2,126	-	8,237	10,363	7,564	11,782	9,140	4,508	(368)	1,439
Carrington School	22,522	81,105	418,515	42,268	564,410	64,098	-	362,346	426,444	46,466	173,683	94,032	(45,704)	(73,982)	(56,527)
Cavalier School	17,593	63,355	326,922	57,193	465,063	50,070	-	147,836	197,906	64,977	164,351	102,132	(7,020)	(35,158)	(22,122)
Center Stanton School	11,710	42,169	217,600	19,501	290,980	33,327	-	70,233	103,560	42,491	108,635	67,222	(5,434)	(19,514)	(5,979)
Central Cass School	28,386	102,222	527,481	68,433	726,522	80,787	-	307,084	387,871	69,056	229,396	129,006	(47,110)	(44,826)	3,129
Central Elementary School	480	1,730	8,925	-	11,135	1,367	-	12,293	13,660	(185)	2,528	829	(2,150)	(2,419)	(1,128)
Central Valley School	9,923	35,735	184,400	-	230,058	28,242	-	161,890	190,132	8,584	64,636	29,542	(32,024)	(25,946)	(4,865)
Dakota Prairie School	14,740	53,082	273,910	30,099	371,831	41,951	-	78,081	120,032	58,275	141,535	89,405	(2,047)	(18,059)	(17,307)
Devils Lake School	81,336	292,901	1,511,416	-	1,885,653	231,483	-	1,384,833	1,616,316	75,043	534,471	246,822	(257,817)	(229,146)	(100,036)
Dickinson School	150,773	542,951	2,801,712	1,891,694	5,387,130	429,099	-	-	429,099	1,102,489	1,954,130	1,420,914	485,468	(3,959)	(1,012)
Divide School	19,411	69,901	360,702	103,850	553,864	55,244	-	85,464	140,708	80,907	190,550	121,902	1,471	6,674	11,652
Drake School	3,523	12,686	65,461	-	81,670	10,026	-	217,026	227,052	(26,623)	(6,725)	(19,183)	(41,037)	(32,108)	(19,707)
Drayton School	10,763	38,757	199,992	249,205	498,717	30,630	-	87,017	117,647	79,965	140,757	102,695	35,923	983	20,747
Dunseith School	24,983	89,966	464,239	524,265	1,103,453	71,101	-	-	71,101	206,697	347,813	259,460	104,457	77,968	35,956
E Central Ctr Exc Childn	6,243	22,481	116,004	5,437	150,165	17,767	-	102,583	120,350	8,276	43,538	21,460	(17,271)	(23,537)	(2,651)
Earl Elem. School	249	897	4,627	-	5,773	709	-	4,292	5,001	194	1,601	720	(826)	(634)	(285)
Edgeley School	10,243	36,888	190,347	-	237,478	29,153	-	49,084	78,237	35,434	93,294	57,067	(6,487)	(12,289)	(7,777)
Edmore School	5,483	19,746	101,894	23,395	150,518	15,606	-	92,430	108,036	13,958	44,931	25,539	(8,483)	(18,643)	(14,819)
Eight Mile School	11,986	43,161	222,720	233,781	511,648	34,111	-	106,706	140,817	87,224	154,925	112,547	38,172	(748)	(21,279)
Elgin-New Leipzig School	9,309	33,524	172,987	146,808	362,628	26,494	-	34,295	60,789	60,517	113,100	80,178	22,421	23,674	1,949
Ellendale School	13,362	48,118	248,295	-	309,775	38,028	-	339,802	377,830	(9,642)	65,833	18,578	(64,322)	(52,118)	(26,384)
Emerado Elementary School	4,710	16,962	87,526	20,470	129,668	13,405	-	34,615	48,020	16,682	43,287	26,629	(2,593)	(4,394)	2,037
Enderlin Area School District	16,505	59,435	306,694	52,255	434,889	46,972	-	25,357	72,329	77,690	170,916	112,547	10,144	(8,714)	(24)
Fairmount School	7,858	28,299	146,025	-	182,182	22,365	-	102,446	124,811	13,277	57,665	29,874	(18,880)	(21,747)	(2,818)
Fargo Public Schools	548,495	1,975,194	10,192,311	-	12,716,000	1,561,015	-	4,050,788	5,611,803	1,576,345	4,674,520	2,734,741	(668,309)	(677,001)	(536,099)
Fessenden-Bowdon School	8,426	30,343	156,574	60,259	255,602	23,980	-	4,595	28,575	47,578	95,172	65,373	13,097	7,615	(1,809)
Finley-Sharon School	7,824	28,174	145,382	-	181,380	22,266	-	325,863	348,129	(31,596)	12,596	(15,072)	(63,610)	(60,972)	(8,095)
Flasher School	9,131	32,883	169,682	92,537	304,233	25,988	-	112,462	138,450	27,465	79,044	46,750	(9,906)	11,027	11,404
Fordville Lankin School	4,613	16,611	85,714	-	106,938	13,128	-	54,085	67,213	9,854	35,908	19,595	(9,021)	(10,974)	(5,638)
Fort Ransom Elem School	1,285	4,627	23,876	5,906	35,694	3,657	-	23,215	26,872	2,583	9,841	5,297	(2,677)	(5,159)	(1,062)
Fort Totten School	12,141	43,723	225,615	-	281,479	34,554	-	264,287	298,841	(2,156)	66,424	23,486	(51,844)	(40,776)	(12,496)
Fort Yates School	10,332	37,206	191,989	234,960	474,487	29,404	-	33,411	62,815	81,299	139,658	103,119	39,014	19,816	28,766
Gackle-Streeter Pub Sch	6,198	22,321	115,179	16,023	159,721	17,640	-	57,250	74,890	17,766	52,778	30,857	(7,601)	(3,565)	(5,407)
Garrison School	18,259	65,754	339,301	86,157	509,471	51,966	-	163,040	215,006	71,257	174,395	109,820	(3,471)	(39,365)	(18,170)
Glen Ullin School	9,262	33,352	172,102	63,412	278,128	26,358	-	42,892	69,250	49,122	101,436	68,682	11,220	(11,917)	(9,666)
Glenburn School	14,609	52,609	271,470	309,417	648,105	41,577	-	150,945	192,522	96,916	179,436	127,770	37,133	36,500	(22,172)
Goodrich School	2,255	8,119	41,894	-	52,268	6,416	-	41,295	47,711	1,533	14,268	6,295	(7,695)	(6,189)	(3,658)
Grafton School	35,111	126,439	652,444	65,909	879,903	99,926	-	314,865	414,791	114,800	313,124	188,952	(28,887)	(72,978)	(49,899)
Grand Forks School	371,951	1,339,437	6,911,707	640,852	9,263,947	1,058,570	-	1,417,239	2,475,809	1,401,025	3,501,989	2,186,567	(121,143)	(66,876)	(113,424)
Great North West Cooperative	1,078	3,881	20,026	37,930	62,915	3,067	-	72,991	76,058	1,452	7,540	3,728	(2,960)	(10,424)	(12,480)
Grenora School	9,108	32,797	169,240	78,357	289,502	25,920	-	56,205	82,125	48,939	100,383	68,174	11,665	(15,086)	(6,699)
Griggs County Central Sch	12,927	46,553	240,218	12,721	312,419	36,791	-	372,949	409,740	(19,355)	53,665	7,947	(72,260)	(65,672)	(1,647)
Gst Educational Services	13,224	47,622	245,739	176,932	483,517	37,636	-	118,241	155,877	61,678	136,377	89,608	7,558	26,720	5,698
Halliday School	3,072	11,062	57,084	4,748	75,966	8,743	-	137,719	146,462	(9,325)	8,027	(2,837)	(21,897)	(25,501)	(18,962)
Hankinson School	11,503	41,424	213,754	-	266,681	32,738	-	372,003	404,741	(32,275)	32,700	(7,981)	(79,350)	(41,464)	(9,689)
Harvey School	18,285	65,847	339,781	93,119	517,032	52,040	-	208,127	260,167	57,662	160,946	96,280	(17,166)	(13,123)	(27,734)
Hatton Eielson Psd	9,026	32,504	167,725	-	209,255	25,688	-	90,515	116,203	21,554	72,538	40,617	(15,383)	(18,745)	(7,529)
Hazelton - Moffit School	6,721	24,203	124,894	87,756	243,574	19,128	-	98,687	117,815	22,400	60,365	36,595	(5,106)	13,790	(2,285)
Hazen School	22,806	82,127	423,786	54,399	583,118	64,905	-	188,226	253,131	79,285	208,104	127,450	(14,047)	(45,584)	(25,221)
Hebron School	9,463	34,078	175,846	22,068	241,455	26,932	-	76,792	103,724	27,488	80,940	47,474	(11,238)	(7,853)	920

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

	Deferred Outflows of Resources					Deferred Inflows of Resources				Deferred (Inflows)/Outflows Recognized In Future Pension Expense (Year Ended June 30):					
Employer Name	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	2018	2019	2020	2021	2022	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Hettinger School	11,012	39,654	204,620	-	255,286	31,339	-	444,378	475,717	(45,214)	16,984	(21,959)	(90,277)	(56,634)	(23,332)
Hillsboro School	20,168	72,628	374,769	141,571	609,136	57,398	-	11,557	68,955	117,119	231,038	159,713	34,585	(4,503)	2,229
Hope School	4,902	17,651	91,083	53,765	167,401	13,950	-	138,953	152,903	6,427	34,115	16,780	(13,633)	(9,757)	(19,435)
Horse Creek Elem. School	517	1,861	9,602	60,358	72,338	1,471	-	15,324	16,795	9,140	12,059	10,231	7,024	7,181	9,907
James River Multidistrict Spec Ed Unit	11,220	40,403	208,487	148,377	408,487	31,931	-	-	31,931	78,879	142,253	102,574	32,963	10,381	9,507
Jamestown School	105,190	378,800	1,954,666	-	2,438,656	299,369	-	1,341,673	1,641,042	169,876	764,040	392,032	(260,601)	(208,560)	(59,173)
Kenmare School	14,200	51,136	263,868	33,705	362,909	40,413	-	187,525	227,938	22,078	102,287	52,068	(36,033)	(6,906)	1,476
Kensal School	2,266	8,159	42,104	33,139	85,668	6,448	-	274,154	280,602	(28,131)	(15,334)	(23,347)	(37,403)	(44,364)	(46,354)
Kidder County School District	16,227	58,434	301,527	-	376,188	46,181	-	507,280	553,461	(29,354)	62,302	4,916	(95,759)	(69,555)	(49,824)
Killdeer School	21,314	76,753	396,058	96,681	590,806	60,659	-	89,452	150,111	99,788	220,178	144,801	12,565	(28,366)	(8,271)
Kindred School	25,608	92,217	475,855	65,084	658,764	72,880	-	192,864	265,744	81,428	226,074	135,511	(23,369)	(30,009)	3,385
Kulm School	7,844	28,246	145,754	-	181,844	22,323	-	254,918	277,241	(13,443)	30,863	3,123	(45,544)	(41,492)	(28,906)
Lake Region Spec Ed	13,445	48,418	249,842	-	311,705	38,265	-	267,259	305,524	2,317	78,262	30,712	(52,706)	(43,666)	(8,737)
Lakota School	9,258	33,339	172,036	15,388	230,021	26,348	-	152,545	178,893	6,713	59,007	26,265	(31,175)	(4,320)	(5,361)
Lamoure School	12,252	44,121	227,670	46,036	330,079	34,869	-	144,527	179,396	38,592	107,797	64,467	(11,548)	(32,691)	(15,935)
Langdon Area School	17,809	64,131	330,924	708,813	1,121,677	50,683	-	547,628	598,311	84,861	185,453	122,472	11,980	5,654	112,942
Larimore School	16,831	60,610	312,756	66,110	456,307	47,901	-	316,897	364,798	11,848	106,917	47,394	(57,028)	(4,047)	(13,575)
Leeds School	8,423	30,333	156,524	21,774	217,054	23,973	-	140,900	164,873	15,477	63,056	33,267	(18,992)	(31,059)	(9,568)
Lewis And Clark School	21,606	77,804	401,483	91,064	591,957	61,490	-	56,827	118,317	101,402	223,442	147,032	12,984	(13,663)	2,444
Lidgerwood School	9,383	33,790	174,360	40,727	258,260	26,704	-	97,838	124,542	26,150	79,150	45,966	(12,248)	393	(5,694)
Linton School	12,732	45,850	236,591	-	295,173	36,235	-	259,685	295,920	3,602	75,519	30,491	(48,502)	(36,322)	(25,536)
Lisbon School	27,460	98,886	510,266	89,657	726,269	78,150	-	348,111	426,261	63,537	218,644	121,531	(48,835)	(21,482)	(33,388)
Litchville-Marion School	6,924	24,936	128,672	8,159	168,691	19,707	-	57,450	77,157	17,537	56,649	32,161	(10,800)	(1,951)	(2,061)
Little Heart Elem. School	952	3,429	17,695	28,688	50,764	2,710	-	8,479	11,189	7,496	12,875	9,508	3,598	2,096	4,001
Logan County	32	115	592	-	739	91	-	702	793	(3)	178	65	(134)	(113)	(49)
Lone Tree Elem. School	1,782	6,418	33,117	45,740	87,057	5,072	-	59,449	64,521	7,900	17,965	11,662	607	(5,168)	(10,428)
Lonetree Spec Ed Unit	1,250	4,502	23,230	7,099	36,081	3,558	-	8,464	12,022	5,286	12,348	7,927	168	(263)	(1,407)
Maddock School	7,522	27,087	139,772	-	174,381	21,407	-	145,447	166,854	6,710	49,197	22,596	(24,073)	(29,751)	(17,154)
Mandan Public Schools	157,172	565,994	2,920,617	1,170,231	4,814,014	447,310	-	-	447,310	956,924	1,844,710	1,288,864	313,719	(13,287)	(24,226)
Mandaree School	11,502	41,420	213,735	44,012	310,669	32,735	-	565,905	598,640	(49,160)	15,810	(24,868)	(96,232)	(63,622)	(69,898)
Manning Elem School	764	2,753	14,206	28,604	46,327	2,176	-	5,379	7,555	8,145	12,463	9,760	5,014	1,073	2,317
Manvel Elem. School	6,580	23,695	122,270	40,928	193,473	18,726	-	41,421	60,147	26,133	63,299	40,029	(796)	4,386	274
Maple Valley School	13,045	46,975	242,400	37,437	339,857	37,125	-	154,871	191,996	28,972	102,655	56,522	(24,414)	(18,310)	2,435
Mapleton Elem. School	5,989	21,568	111,292	117,712	256,561	17,045	-	50,474	67,519	36,830	70,660	49,479	12,321	4,171	15,580
Marmarth Elem. School	1,165	4,197	21,655	49,531	76,548	3,317	-	87,871	91,188	(2,178)	4,405	283	(6,948)	(275)	(9,927)
Max School	9,488	34,167	176,306	16,148	236,109	27,002	-	43,854	70,856	35,614	89,206	55,652	(3,211)	(5,432)	(6,577)
May-Port C-G School	21,921	78,942	407,352	54,334	562,549	62,388	-	91,110	153,498	93,490	217,313	139,787	3,780	(27,042)	(18,277)
Mcclusky School	5,131	18,476	95,341	55,328	174,276	14,602	-	297,248	311,850	(26,147)	2,834	(15,311)	(47,143)	(20,935)	(30,870)
Mckenzie County	340	1,226	6,326	2,839	10,731	969	-	21,354	22,323	(2,654)	(731)	(1,935)	(4,045)	(2,601)	375
Mckenzie County School	55,077	198,340	1,023,464	2,151,687	3,428,568	156,750	-	-	156,750	705,221	1,016,324	821,541	479,825	201,761	47,149
Medina School	8,569	30,858	159,233	122,679	321,339	24,387	-	59,644	84,031	45,930	94,332	64,027	10,862	19,033	3,122
Menoken Elem School	1,450	5,221	26,942	69,007	102,620	4,126	-	-	4,126	19,158	27,347	22,220	13,225	11,005	5,538
Midkota	7,950	28,630	147,738	7,647	191,965	22,627	-	168,221	190,848	(1,074)	43,834	15,717	(33,611)	(22,703)	(1,045)
Midway School	11,321	40,767	210,362	63,850	326,300	32,218	-	192,094	224,312	23,742	87,686	47,651	(22,585)	(12,113)	(22,396)
Milnor School	10,674	38,437	198,342	-	247,453	30,377	-	326,095	356,472	(16,872)	43,418	5,670	(60,550)	(61,876)	(18,810)
Minnewaukan School	12,379	44,577	230,026	1,448	288,430	35,230	-	395,472	430,702	(20,009)	49,912	6,134	(70,669)	(55,033)	(52,606)
Minot School	350,651	1,262,734	6,515,907	-	8,129,292	997,951	-	2,037,541	3,035,492	1,101,972	3,082,624	1,842,531	(333,028)	(411,434)	(188,867)
Minto School	10,178	36,652	189,129	157,585	393,544	28,966	-	48,622	77,588	61,465	118,954	82,960	19,815	10,401	22,362
Mohall Lansford Sherwood	16,868	60,742	313,440	-	391,050	48,005	-	518,632	566,637	(30,066)	65,211	5,558	(99,094)	(90,117)	(27,078)
Montpelier School	6,079	21,892	112,968	31,638	172,577	17,302	-	21,105	38,407	29,491	63,829	42,329	4,613	(803)	(5,287)
Morton County	244	878	4,531	1,697	7,350	694	-	776	1,470	1,335	2,711	1,849	338	(150)	(202)
Mott-Regent School	11,586	41,722	215,294	-	268,602	32,974	-	261,507	294,481	2,408	67,851	26,877	(45,005)	(43,915)	(34,093)
Mt Pleasant School	12,933	46,575	240,334	38,971	338,813	36,809	-	86,601	123,410	51,487	124,541	78,802	(1,443)	(19,782)	(18,201)
Munich School	7,546	27,175	140,229	113,560	288,510	21,477	-	9,088	30,565	55,912	98,538	71,850	25,028	10,331	(3,713)
N Central Area Career And Tech Center	1,131	4,073	21,016	-	26,220	3,219	-	20,327	23,546	1,052	7,440	3,441	(3,578)	(3,774)	(1,907)
Napoleon School	11,743	42,287	218,206	-	272,236	33,420	-	147,863	181,283	22,849	89,178	47,649	(25,207)	(30,305)	(13,211)
Naughton Rural School	678	2,441	12,595	17,902	33,616	1,929	-	1,357	3,286	5,693	9,523	7,126	2,919	2,727	2,339
Nd Center For Distance Education	10,382	37,388	192,929	476,366	717,065	29,548	-	235,754	265,302	119,364	178,009	141,291	76,877	(50,381)	(13,395)
Nd Dept Of Public Instruction	2,071	7,456	38,476	196,581	244,584	5,893	-	3,610	9,503	43,728	55,424	48,101	35,253	34,526	18,049
Nd School For Blind	5,371	19,343	99,812	29,785	154,311	15,287	-	111,274	126,561	8,416	38,756	19,760	(13,565)	(10,418)	(15,198)
Nd School For Deaf	7,416	26,704	137,799	72,806	244,725	21,105	-	61,149	82,254	34,086	75,973	49,747	3,739	(7,465)	6,391
Nd United	2,480	8,931	46,088	-	57,499	7,059	-	29,954	37,013	4,905	18,915	10,143	(5,245)	(5,813)	(2,419)
Nd Youth Correctional Cnt	9,160	32,987	170,216	19,632	231,995	26,070	-	214,381	240,451	3,627	55,367	22,972	(33,857)	(27,326)	(29,240)
Nedrose School	20,144	72,540	374,317	1,319,099	1,786,100	57,329	-	-	57,329	351,635	465,417	394,178	269,202	246,344	1,994
Nelson County	100	359	1,850	447	2,756	283	-	-	283	537	1,099	747	130	(25)	(17)
Nesson School	12,682	45,669	235,659	147,342	441,352	36,093	-	103,139	139,232	69,685	141,319	96,468	17,782	(2,248)	(20,885)
New England School	11,153	40,163	207,248	182,613	441,177	31,741	-	-	31,741	88,944	151,941	112,498	43,303	15,458	(2,708)
New Public School	16,164	58,207	300,357	-	374,728	46,002	-	295,544	341,546	8,378	99,678	42,514	(57,767)	(44,323)	(15,297)

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Deferred Outflows of Resources: Differences Between Expected and Actual Experience	Deferred Outflows of Resources: Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Deferred Outflows of Resources: Changes of Assumptions	Deferred Outflows of Resources: Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Deferred Outflows of Resources: Total Deferred Outflows of Resources	Deferred Inflows of Resources: Differences Between Expected and Actual Experience	Deferred Inflows of Resources: Changes of Assumptions	Deferred Inflows of Resources: Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Deferred Inflows of Resources: Total Deferred Inflows of Resources	Deferred (Inflows)/Outflows Recognized In Future Pension Expense (Year Ended June 30): 2018	2019	2020	2021	2022	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
New Rockford Sheyenne School	12,890	46,418	239,523	3,734	302,565	36,684	-	342,996	379,680	(5,098)	67,710	22,125	(57,850)	(68,919)	(35,083)
New Salem-Almont	14,970	53,908	278,173	348,530	695,581	42,604	-	183,386	225,990	96,031	180,587	127,645	34,770	(4,702)	35,262
New Town School	36,441	131,228	677,157	525,723	1,370,549	103,711	-	184,231	287,942	228,234	434,070	305,195	79,101	(4,417)	40,424
Newburg United District	5,407	19,472	100,481	32,264	157,624	15,389	-	6,985	22,374	27,843	58,387	39,264	5,713	3,208	833
North Border School	22,073	79,488	410,170	257,467	769,198	62,820	-	553,429	616,249	31,965	156,645	78,583	(58,367)	(4,614)	(51,263)
North Sargent School	11,904	42,868	221,204	232,289	508,265	33,879	-	75,135	109,014	86,452	153,692	111,593	37,734	25,770	(15,990)
North Star	12,926	46,549	240,201	93,302	392,978	36,788	-	136,493	173,281	53,809	126,823	81,108	911	(16,436)	(26,516)
North Valley Area Career	4,563	16,433	84,799	80,138	185,933	12,988	-	158,049	171,037	(3,778)	21,998	5,860	(22,455)	1,245	12,028
Northern Cass School Dist	24,846	89,475	461,705	599,834	1,175,860	70,713	-	-	70,713	214,780	355,124	267,253	113,099	87,144	67,749
Northern Plains Spec Ed	2,441	8,791	45,361	123,319	179,912	6,947	-	12,812	19,759	34,177	47,965	39,332	24,188	5,697	8,795
Northwood School	12,805	46,111	237,939	180,347	477,202	36,442	-	-	36,442	89,832	162,157	116,873	37,431	26,325	8,143
Oakes School	15,785	56,844	293,324	-	365,953	44,924	-	240,460	285,384	21,542	110,705	54,880	(43,056)	(40,203)	(23,299)
Oberon Elem School	2,797	10,074	51,983	106,245	171,099	7,962	-	260,159	268,121	(24,195)	(8,393)	(18,286)	(35,644)	(27,395)	16,890
Oliver - Mercer Spec Ed	7,370	26,540	136,951	41,994	212,855	20,975	-	142,188	163,163	18,960	60,589	34,525	(11,204)	(27,330)	(25,846)
Page School	5,925	21,335	110,093	84,094	221,447	16,861	-	84,333	101,194	22,347	55,813	34,861	(1,899)	(3,159)	12,287
Park River Area School District	16,781	60,431	311,832	53,027	442,071	47,759	-	224,267	272,026	31,458	126,246	66,899	(37,214)	(21,290)	3,946
Parshall School	12,608	45,403	234,286	-	292,297	35,882	-	390,963	426,845	(21,424)	49,792	5,204	(73,020)	(53,875)	(41,226)
Peace Garden Spec Ed	4,414	15,897	82,029	61,300	163,640	12,563	-	-	12,563	33,156	58,089	42,478	15,091	960	1,305
Pembina Spec Ed Coop	860	3,099	15,990	188	20,137	2,449	-	84,009	86,458	(17,130)	(12,269)	(15,312)	(20,649)	(744)	(218)
Pingree - Buchanan School	6,649	23,944	123,554	13,019	167,166	18,923	-	44,217	63,140	21,199	58,756	35,242	(6,013)	(2,007)	(3,152)
Pleasant Valley Elem	-	0	-	-	-	-	-	19,011	19,011	(4,753)	(4,753)	(4,753)	(4,752)	-	-
Powers Lake School	8,727	31,427	162,167	92,093	294,414	24,837	-	83,850	108,687	43,869	93,163	62,300	8,152	(5,238)	(16,519)
Richardton-Taylor	13,912	50,098	258,514	63,746	386,270	39,593	-	96,577	136,170	57,319	135,900	86,700	385	(26,286)	(3,919)
Richland School	12,277	44,212	228,140	105,556	390,185	34,941	-	296,756	331,697	10,393	79,741	36,322	(39,847)	(42,135)	14,013
Robinson School	-	0	-	-	-	-	-	91,004	91,004	(20,228)	(20,228)	(20,228)	(20,228)	(10,092)	-
Rolette County	-	0	-	-	-	-	-	4,550	4,550	(1,137)	(1,137)	(1,137)	(1,139)	-	-
Rolette School	10,236	36,862	190,213	161,991	399,302	29,132	-	18,633	47,765	73,755	131,575	95,374	31,866	6,498	12,469
Roosevelt School	2,784	10,027	51,739	30,498	95,048	7,924	-	159,604	167,528	(10,618)	5,109	(4,738)	(22,014)	(17,368)	(22,852)
Roughrider Area Career And Tech Center	1,080	3,889	20,067	60,803	85,839	3,073	-	104,573	107,646	(6,562)	(462)	(4,281)	(10,982)	(9,338)	9,818
Roughrider Service Program	2,384	8,584	44,293	235,834	291,095	6,784	-	14,372	21,156	60,509	73,973	65,543	50,752	22,255	(3,092)
Rugby School	25,957	93,474	482,341	-	601,772	73,873	-	70,764	144,637	99,814	246,434	154,635	(6,413)	(25,693)	(11,646)
Rural Cass Spec Ed	7,641	27,516	141,988	-	177,145	21,746	-	264,550	286,296	(13,819)	29,342	2,319	(45,090)	(41,874)	(40,030)
Sargent Central School	11,926	42,946	221,608	62,026	338,506	33,941	-	51,829	85,770	49,504	116,867	74,691	701	4,114	6,860
Sawyer School	5,685	20,473	105,642	38,877	170,677	16,180	-	350,346	366,526	(26,104)	6,008	(14,098)	(49,368)	(63,558)	(48,726)
Scranton School	8,786	31,639	163,265	17,774	221,464	25,005	-	71,205	96,210	28,606	78,234	47,161	(7,348)	(18,702)	(2,697)
Se Region Career And Tech	11,719	42,202	217,769	50,650	322,340	33,353	-	-	33,353	60,772	126,967	85,522	12,810	1,923	994
Selfridge School	7,115	25,621	132,208	21,247	186,191	20,249	-	18,401	38,650	30,556	70,743	45,582	1,442	446	(1,228)
Sheyenne Valley Area Voc	5,674	20,434	105,442	13,462	145,012	16,149	-	93,036	109,185	10,154	42,207	22,139	(13,068)	(12,081)	(13,525)
Sheyenne Valley Spec Ed	11,394	41,030	211,723	40,579	304,726	32,427	-	404,114	436,541	(16,250)	48,108	7,813	(62,878)	(81,982)	(26,626)
Slope County	197	710	3,665	-	4,572	561	-	1,528	2,089	548	1,662	965	(260)	(290)	(143)
Solen - Cannonball School	13,094	47,155	243,325	115,719	419,293	37,267	-	309,328	346,595	581	74,545	28,235	(53,009)	6,879	15,467
Souris Valley Spec Ed	7,952	28,634	147,758	-	184,344	22,630	-	1,010,688	1,033,318	(140,543)	(95,629)	(123,750)	(173,084)	(176,170)	(139,798)
South Cent. Prairie Sp Ed	806	2,904	14,984	-	18,694	2,295	-	5,150	7,445	2,417	6,972	4,120	(880)	(917)	(463)
South East Education Cooperative	5,430	19,553	100,898	1,078,545	1,204,426	15,453	-	-	15,453	203,475	234,145	214,942	181,254	176,984	178,172
South Heart School	12,872	46,352	239,182	255,388	553,794	36,632	-	-	36,632	109,609	182,314	136,793	56,936	22,599	8,911
South Prairie Elem School	18,312	65,945	340,286	1,242,720	1,667,263	52,117	-	-	52,117	319,782	423,220	358,457	244,843	204,787	64,058
South Valley Spec Ed	3,058	11,012	56,825	35,978	106,873	8,703	-	483,339	492,042	(71,262)	(53,989)	(64,804)	(83,774)	(95,175)	(16,165)
Southwest Special Education Unit	522	1,879	9,694	1,610	13,705	1,485	-	4,408	5,893	1,468	4,414	2,569	(665)	(93)	118
St. John'S School	20,423	73,547	379,512	66,385	539,867	58,125	-	94,793	152,918	83,266	198,627	126,399	(315)	(22,233)	1,207
St. Thomas School	5,042	18,156	93,688	477	117,363	14,349	-	122,997	137,346	(1,170)	27,309	9,478	(21,802)	(25,885)	(7,914)
Stanley School	28,481	102,564	529,245	571,126	1,231,416	81,057	-	49,865	130,922	220,926	381,801	281,077	104,371	48,050	64,270
Starkweather School	4,086	14,714	75,925	-	94,725	11,628	-	168,766	180,394	(13,164)	9,915	(4,535)	(29,884)	(28,292)	(19,710)
Sterling School	2,058	7,413	38,250	27,766	75,487	5,858	-	-	5,858	15,202	26,829	19,549	6,780	707	561
Strasburg School District	6,895	24,830	128,125	80,220	240,070	19,623	-	114,018	133,641	15,517	54,463	30,079	(12,702)	10,382	8,689
Surrey School	18,928	68,162	351,725	15,998	454,813	53,869	-	106,678	160,547	67,680	174,594	107,655	(9,782)	(28,663)	(17,218)
Sweet Briar Elem School	796	2,866	14,791	27,005	45,458	2,265	-	-	2,265	8,140	12,636	9,821	4,881	4,082	3,633
Tgu School District	20,876	75,179	387,933	-	483,988	59,414	-	313,004	372,418	32,853	150,774	76,943	(52,578)	(55,631)	(40,791)
Thompson School	17,703	63,752	328,970	241,750	652,175	50,384	-	68,372	118,756	103,335	203,333	140,724	30,886	34,053	21,088
Tioga School	24,183	87,085	449,373	427,388	988,029	68,824	-	63,499	132,323	195,811	332,408	246,884	96,845	1,391	(17,632)
Turtle Lake-Mercer School	9,776	35,203	181,653	90,876	317,508	27,821	-	224,616	252,437	6,411	61,629	27,057	(33,592)	(8,730)	12,297
Twin Buttes Elem. School	3,353	12,073	62,301	19,462	97,189	9,542	-	112,999	122,541	(5,746)	13,192	1,335	(19,467)	(16,931)	2,265
Underwood School	11,980	43,141	222,612	-	277,733	34,094	-	163,859	197,953	21,369	89,037	46,670	(27,655)	(31,447)	(18,195)
United School	26,245	94,513	487,700	496,816	1,105,274	74,694	-	179,164	253,858	152,679	300,926	208,108	45,273	69,422	75,007
Upper Valley Spec Ed	20,133	72,502	374,119	197,321	664,075	57,299	-	46,007	103,306	118,950	232,671	161,469	36,559	(1,247)	12,370
Valley - Edinburg School	13,297	47,883	247,084	226,982	535,246	37,842	-	147,231	185,073	75,262	150,369	103,344	20,850	21,413	(21,066)
Valley City School	48,243	173,729	896,470	118,558	1,237,000	137,300	-	730,835	868,135	63,323	335,824	165,210	(134,105)	(24,133)	(37,255)
Velva School	20,529	73,926	381,471	83,150	559,076	58,425	-	121,031	179,456	74,379	190,336	117,735	(9,629)	(1,076)	7,877
Wahpeton School	52,479	188,982	975,176	-	1,216,637	149,354	-	713,728	863,082	95,470	391,896	206,302	(119,295)	(143,694)	(77,125)

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

	Deferred Outflows of Resources					Deferred Inflows of Resources				Deferred (Inflows)/Outflows Recognized In Future Pension Expense (Year Ended June 30):					
Employer Name	**Differences Between Expected and Actual Experience**	**Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments**	**Changes of Assumptions**	**Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions**	**Total Deferred Outflows of Resources**	**Differences Between Expected and Actual Experience**	**Changes of Assumptions**	**Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions**	**Total Deferred Inflows of Resources**	**2018**	**2019**	**2020**	**2021**	**2022**	**Thereafter**
	(14)	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	**(21)**	**(22)**	**(23)**	**(24)**	**(25)**	**(26)**	**(27)**	**(28)**
Ward County	224	808	4,172	-	5,204	639	-	2,041	2,680	596	1,864	1,070	(324)	(460)	(220)
Warwick School	12,214	43,984	226,964	179,198	462,360	34,761	-	551,467	586,228	(558)	68,433	25,237	(50,540)	(104,947)	(61,492)
Washburn School	12,878	46,377	239,312	87,162	385,729	36,652	-	122,072	158,724	52,308	125,052	79,507	(396)	(7,433)	(22,034)
West Fargo School	458,368	1,650,634	8,517,532	10,450,487	21,077,021	1,304,512	-	-	1,304,512	4,041,573	6,630,663	5,009,623	2,165,758	1,260,219	664,673
West River Student Services	5,569	20,053	103,478	68,133	197,233	15,848	-	35,717	51,565	34,459	65,913	46,219	11,671	(9,741)	(2,852)
Westhope School	8,652	31,156	160,769	71,770	272,347	24,623	-	66,410	91,033	42,497	91,367	60,769	7,093	(17,652)	(2,760)
White Shield School	10,883	39,193	202,240	-	252,316	30,974	-	252,550	283,524	(2,687)	58,789	20,299	(47,227)	(40,641)	(19,740)
Williston School	148,540	534,910	2,760,219	3,159,407	6,603,076	422,744	-	112,401	535,145	1,354,735	2,193,764	1,668,445	746,853	166,158	(62,025)
Wilmac Special Education	30,333	109,233	563,658	1,312,946	2,016,170	86,328	-	-	86,328	387,966	559,302	452,028	263,828	164,573	102,146
Wilton School	10,722	38,610	199,235	77,469	326,036	30,514	-	-	30,514	60,669	121,230	83,312	16,792	7,031	6,490
Wing School	5,673	20,428	105,411	65,269	196,781	16,144	-	54,238	70,382	23,976	56,018	35,956	764	459	9,226
Wishek School	10,112	36,416	187,912	76,599	311,039	28,780	-	34,704	63,484	51,139	108,259	72,496	9,756	(1,626)	7,531
Wolford School	4,205	15,143	78,139	27,837	125,324	11,968	-	27,622	39,590	19,704	43,457	28,585	2,494	(7,475)	(1,030)
Wyndmere School	11,241	40,481	208,887	-	260,609	31,992	-	170,719	202,711	12,403	75,899	36,144	(33,601)	(24,624)	(8,325)
Yellowstone Elem. School	4,187	15,077	77,798	52,163	149,225	11,915	-	56,627	68,542	18,443	42,091	27,285	1,311	(10,345)	1,897
Zeeland School	3,114	11,213	57,861	14,315	86,503	8,862	-	153,263	162,125	(16,087)	1,502	(9,510)	(28,831)	(24,175)	1,477
Grand Totals:	**5,268,440**	**18,972,249**	**97,899,797**	**42,488,385**	**164,628,871**	**14,993,953**	**-**	**42,488,385**	**57,482,338**	**23,012,199**	**52,770,974**	**34,138,888**	**1,451,717**	**(2,691,679)**	**(1,535,566)**

Note: Columns may not foot due to rounding.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 18, 2018**

SUBJ: **TFFR BOARD POLICY C-7**
Employer Payment Plan Models, 2nd reading

The attached amended TFFR Board Policy, C-7, Employer Payment Plan Models, is being submitted for 2nd reading and final adoption by the TFFR Board. The 1st reading was at the October 2017 meeting.

Board Action Requested: Board motion to approve 2nd reading and final adoption of Board Policy C-7.

Policy Type: TFFR Program
Policy Title: Employer Payment Plan Models

The TFFR B~~b~~oard has developed models relating to employer payment of member contributions as provided for in NDCC 15-39.1-09 and NDAC 82-04-01. The models are outlined in employer instructions prepared by the fund. Special provisions apply to state agencies and institutions, and employers that have not adopted a model.

Employers must select the employer payment plan model under which they will pay member ~~assessments~~contributions on a form provided by the administrative office. The model selected by the employer can only be changed once each year at the beginning of the fiscal year.

The following employer payment plan models are available to participating employers:

- Model 1: Member contributions are paid by the member through a salary reduction and remitted to TFFR by the employer as tax deferred contributions.

- Model 2 All: Member contributions are paid by the employer as a salary supplement and remitted to TFFR as tax deferred contributions.

- Model 2 Partial (%): A fixed percentage (1% minimum) of the member contributions are paid by the employer as a salary supplement and remitted to TFFR as tax deferred contributions. The remaining member contributions are paid by the member and remitted by the employer as tax deferred contributions.

- Model 3 Partial ($): A fixed dollar amount of the member contributions are paid by the employer as a salary supplement and remitted to TFFR as tax deferred contributions. The remaining member contributions are paid by the member and remitted by the employer as tax deferred contributions. Effective July 1, 2003, employers may no longer select Model 3. Any employers currently paying member contributions under this model may continue as a closed group, but Model 3 will no longer be available to other employers. Effective July 1, 2019, Model 3 will be eliminated, and no employers will be allowed to utilize this model.

- Model 4 State Agencies: Four Percent (4%) of the member contributions (or the % of member contributions the State agrees to pay) are paid by the State as a salary supplement and remitted to TFFR as tax deferred contributions. The remaining member contributions are paid by the member and remitted by the employer as tax deferred contributions.~~Effective July 1, 2007, the portion of member contributions deducted from the member's salary can be made on a tax deferred basis for state agencies and institutions (Model 4).~~

~~Effective July 1, 2012, the portion of member contributions deducted from the member's salary can be made on a tax deferred basis under all models (Model 1, 2, 3, 4).~~

Employers who do not select one of the above models must report member contributions paid by the member and remitted by the employer as taxed contributions. Payment of member contributions cannot be made on a tax deferred basis unless one of the above approved models is selected in writing.

TFFR Board Adopted: July 16, 1998.
Amended: March 13, 2003; March 15, 2007; September 22, 2011.

NDTFFR Board
2019 Legislative Planning

January 25, 2018

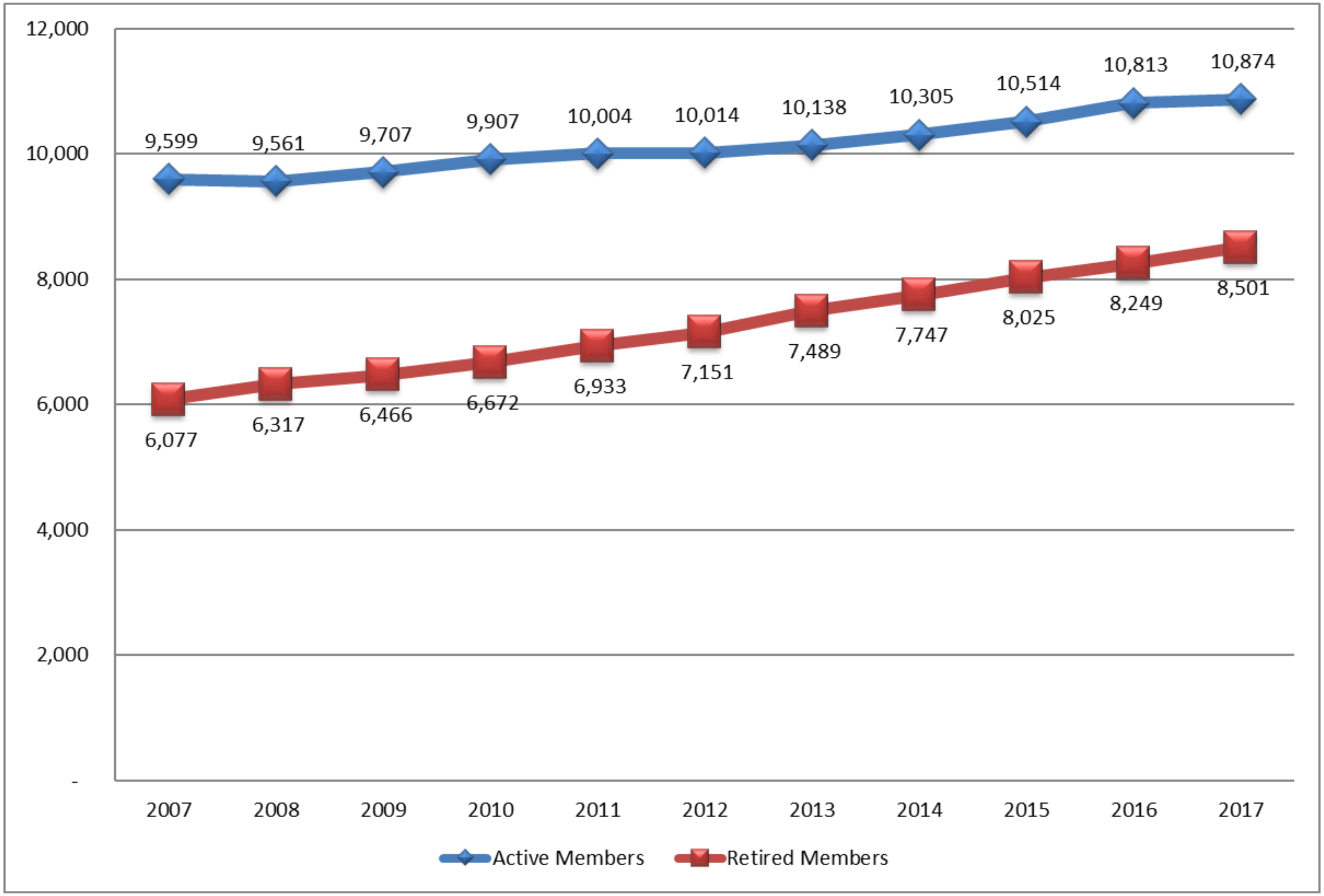
Time Line

- Jan – March 2018
  - TFFR Board Legislative Planning
- April 1, 2018
  - Deadline to submit bill drafts to Legislative Employee Benefits Programs Committee (LEBPC) for study.
- April – November 2018
  - LEBPC study of legislative proposals, actuarial and technical analysis, public hearings, and Committee recommendation (favorable, unfavorable, no rec)
- December 6, 2018
  - Deadline for agencies and bill sponsors to file bills with Legislative Council for 2019 legislative session
- January 3 – April 26, 2019
  - 66th Legislative Assembly in Session

Current NDTFFR Defined Benefit Plan

- Based on 2017 valuation data

Active and Retired Membership

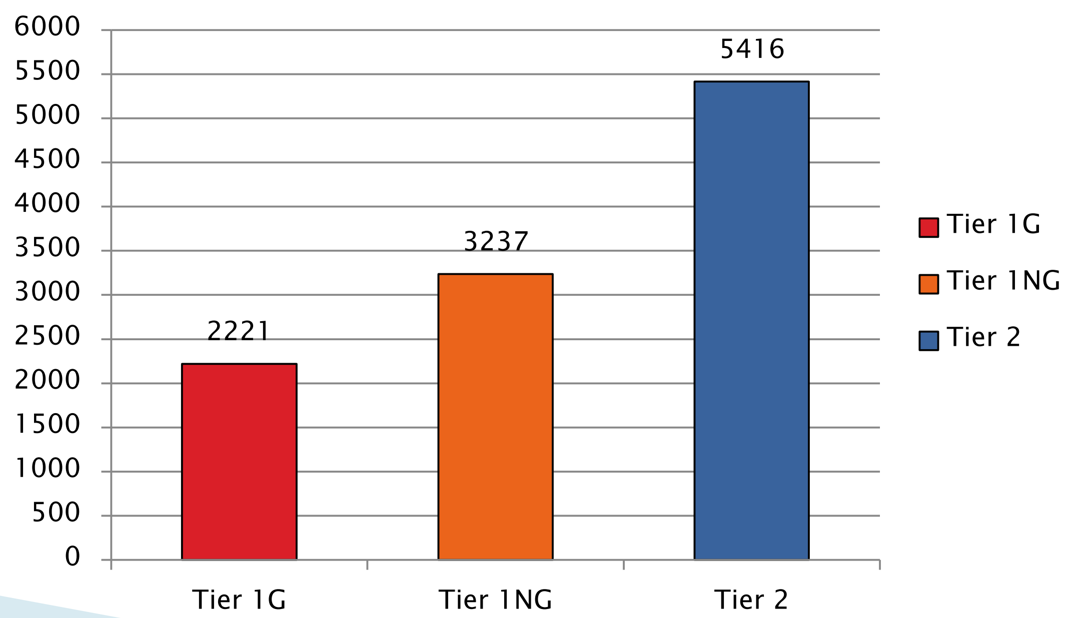


Since 2007, number of retirees and beneficiaries has increased 3.4% per year on average.

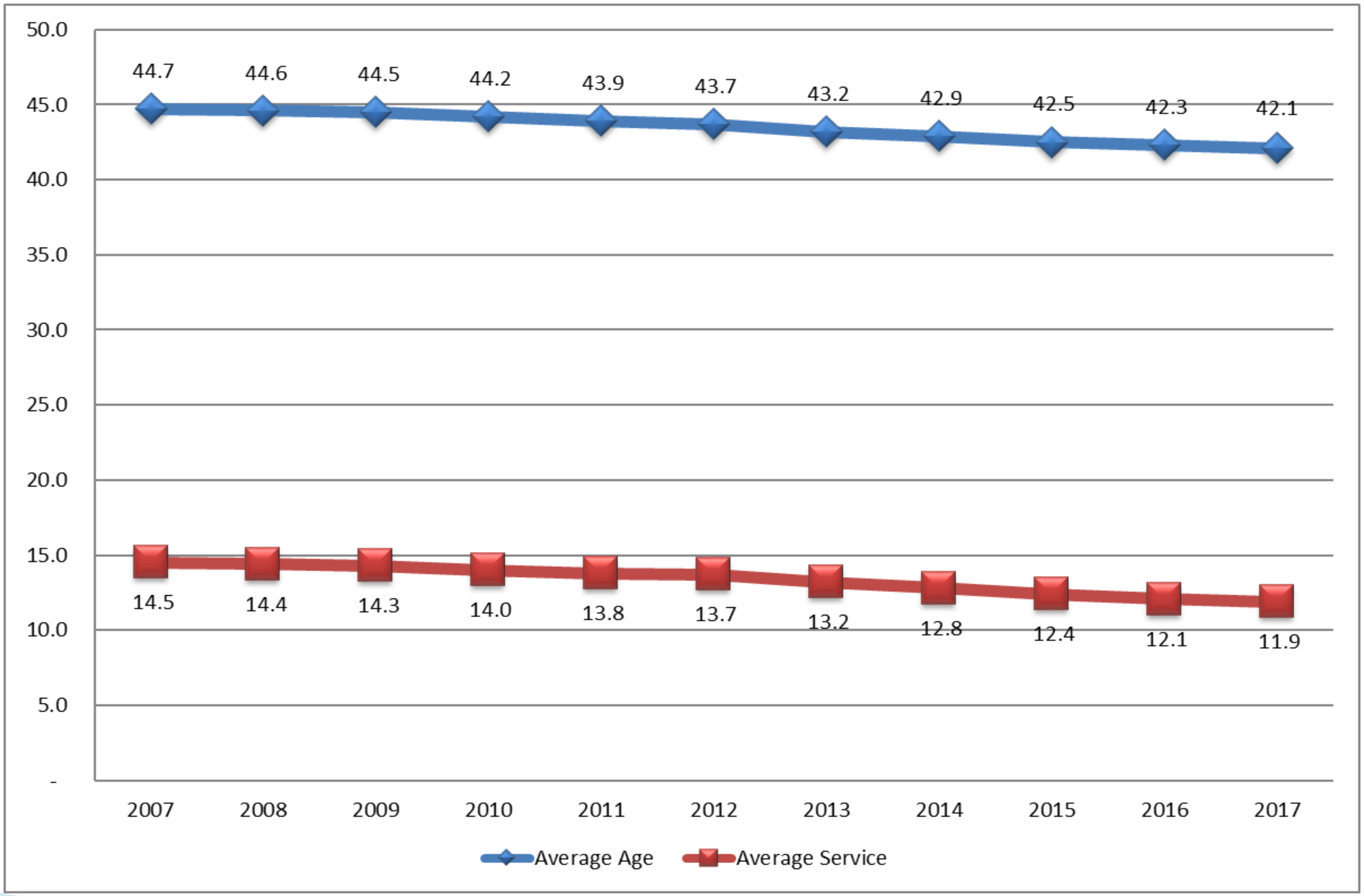
TFFR Membership Tiers

- **Tier 1- Members who have service credit prior to 7/1/08**
  - Grandfathered – Members who on 6/30/13 were within 10 years of retirement eligibility (age 55+ or Rule of 65+).
  - Non-grandfathered – Members who on 6/30/13 were more than 10 years away from retirement eligibility (less than Rule of 65).
- **Tier 2 – Members employed on or after 7/1/08**

Total Active Members 10,874 as of 6/30/17



Average Age and Service of Active Members



Summary of TFFR Pension Benefits for Membership Tiers

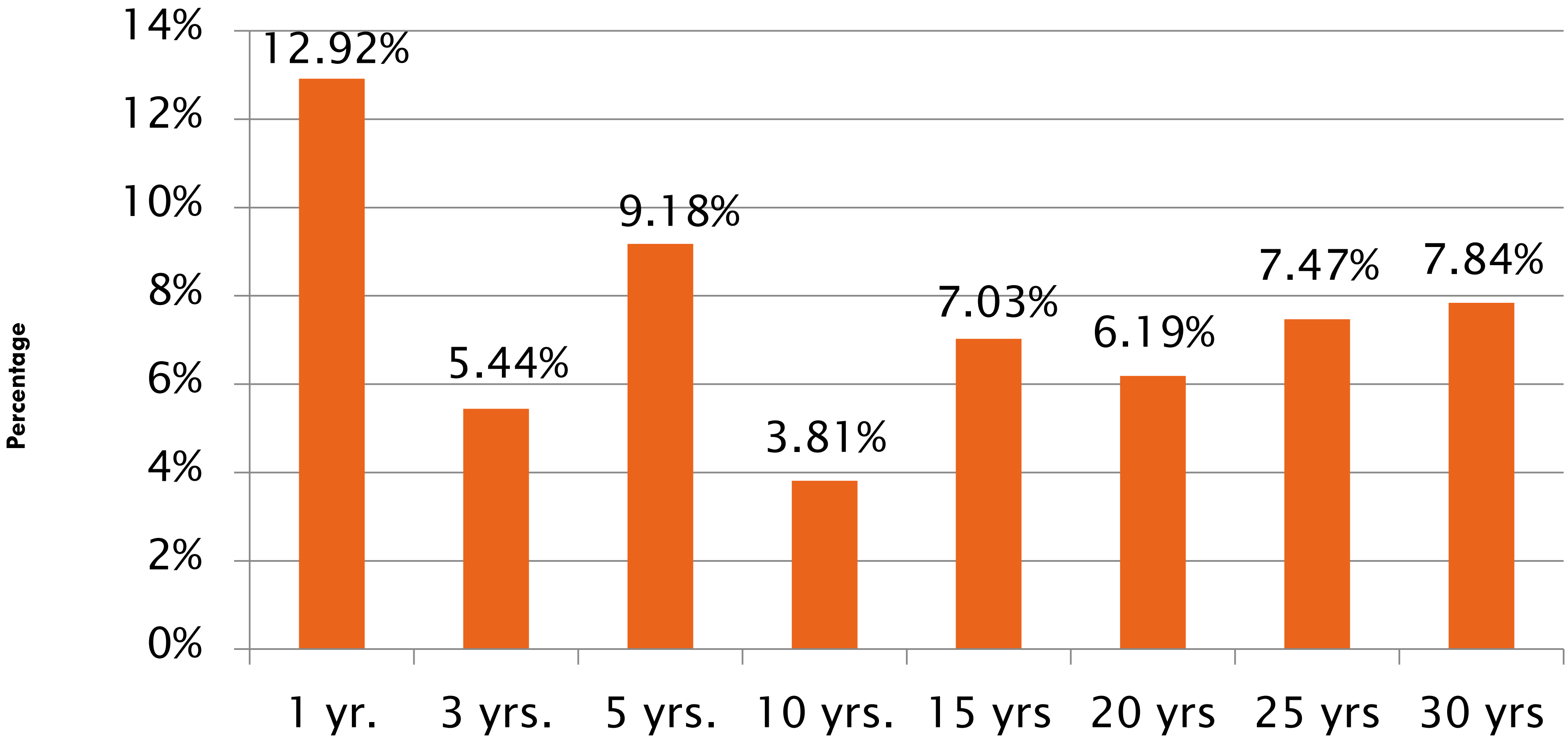
	Tier 1 Grandfathered Member	Tier 1 Non-Grandfathered Member	Tier 2 Member
Vesting Period	3 years	3 years	5 years
Unreduced Retirement Eligibility			
Minimum Age	No	60	60
AND Rule	Rule of 85	Rule of 90	Rule of 90
OR Normal Retirement Age	65	65	65
Reduced Retirement Eligibility			
Minimum Age	55	55	55
Reduction Factor	6%	8%	8%
Retirement Formula Multiplier	2%	2%	2%
x Final average salary (high salaries of career)	3 year FAS	3 year FAS	5 year FAS
x Service Credit	Total Years	Total Years	Total Years
Disability Retirement Retirement formula multiplier (2%) X FAS X total years	Yes	Yes	Yes
Death/Survivor Benefits Refund of account value or [illegible] annuity to survivor based on member's vesting status.	Yes	Yes	Yes

Contribution Rates

RATES %	Employer	Member	Total	Increase
1997 – 2008	7.75%	7.75%	15.5%	--
7/1/08	8.25%	7.75%	16.0%	+0.5%
7/1/10	8.75%	7.75%	16.5%	+0.5%
7/1/12	10.75%	9.75%	20.5%	+4.0%
7/1/14	12.75%	11.75%	24.5%	+4.0%

Note: 2011 legislation increased contribution rates to improve TFFR funding. Increased rates will be in effect until TFFR reaches 100% funded ratio, then rates will be reduced to 7.75% each.

TFFR Net Investment Performance – Average Fiscal Year Ended June 30, 2017

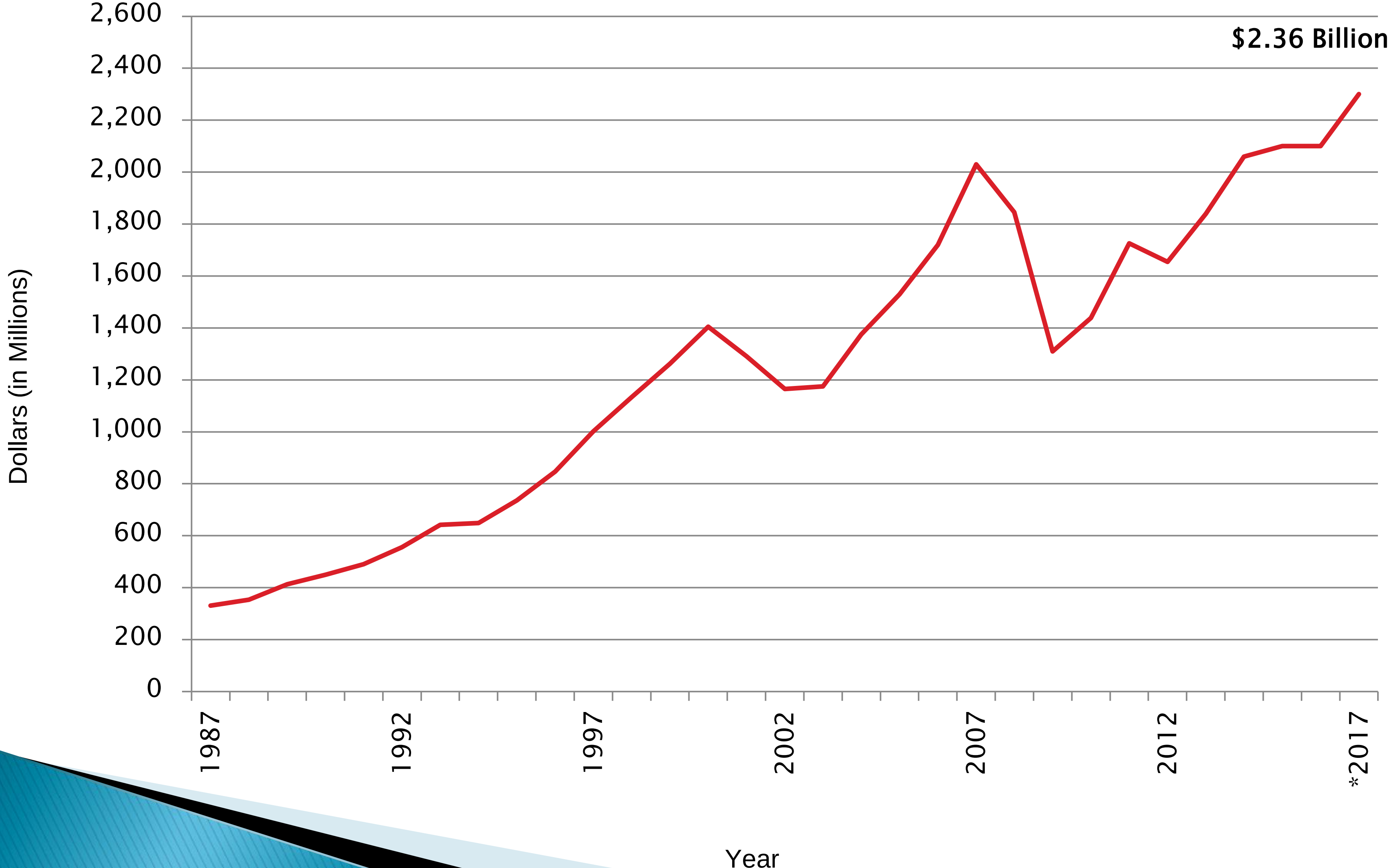


Note: The investment returns shown were calculated by the SIB investment consultant. This calculation uses daily time-weighted cash flows in compliance with Global Investment Performance Standards (GIPS). These returns differ from the returns calculated by the actuary. The actuary calculation uses a very simplified approach with annual income and valuation data obtained by the actuary at the end of each fiscal year.

Market Value of Assets

	Fiscal Year Ending June 30, 2017	Fiscal Year Ending June 30, 2016
Beginning of Year	$2,124	$2,142
Contributions:		
• Employer	86	83
• Member	79	76
• Service Purchases	3	3
• Total	168	162
Benefits and Refunds	(199)	(186)
Investment Income (net)	267	6
End of Year	$2,360	$2,124
Rate of Return	12.64%	0.39%

Fair (Market) Value of TFFR Assets
1987 – 2017



Valuation Results ($ in millions)

	July 1, 2017	July 1, 2016
Actuarial Accrued Liability:		
• Active Members	$1,545	$1,523
• Inactive Members	96	90
• Retirees and Beneficiaries	2,093	1,976
Total	**$3,734**	**$3,589**
Actuarial Assets	2,380	2,229
Unfunded Accrued Liability	$1,354	$1,360
Funded Ratio	**63.7%**	**62.1%**

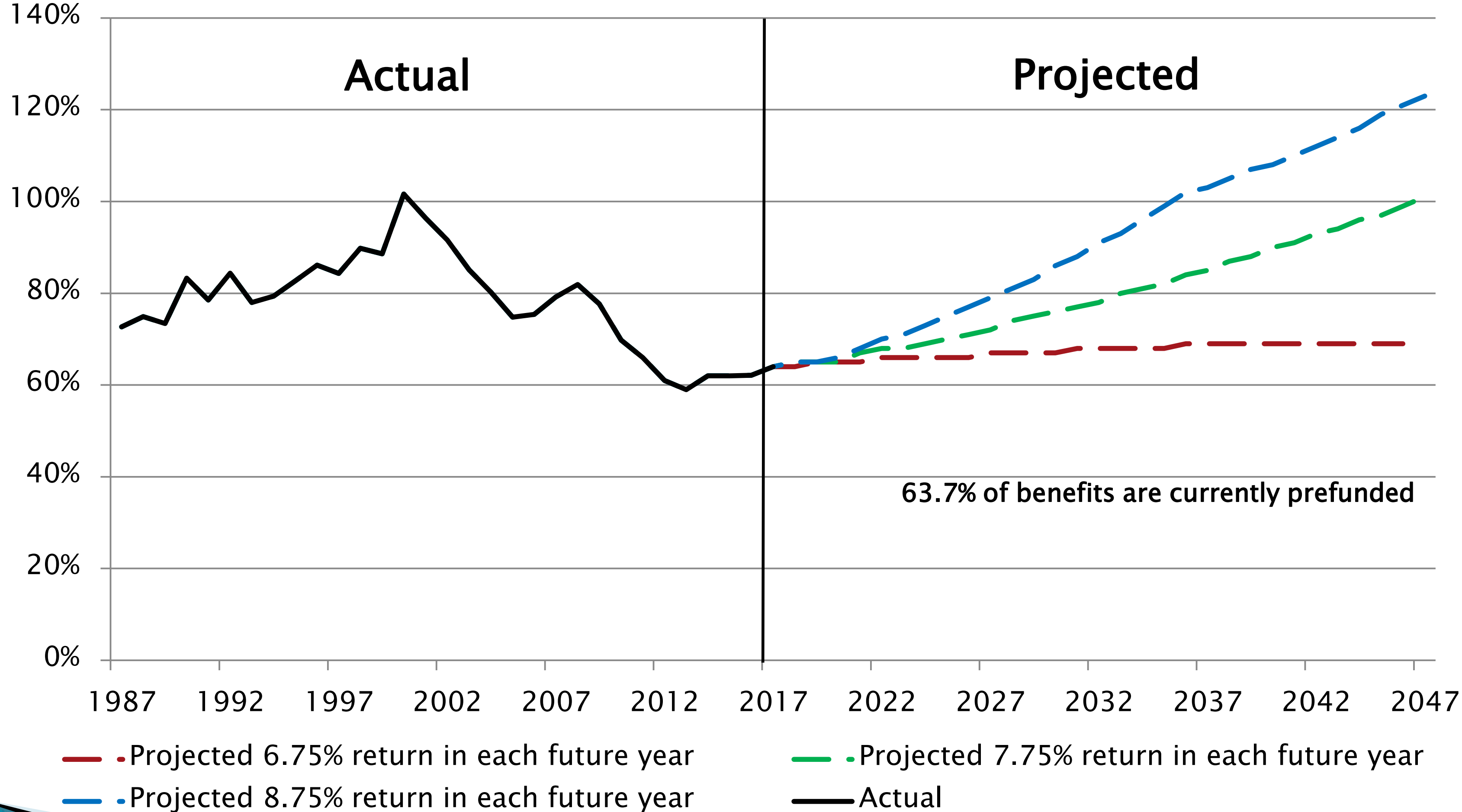
Actuarially Determined Contribution

	For the Year Beginning	
	July 1, 2017	July 1, 2016
Normal Cost Rate	12.06%	12.04%
Member Rate	11.75%	11.75%
Employer Normal Cost Rate	0.31%	0.29%
Amortization of UAAL	12.69%	12.93%
Actuarially Determined Contribution	12.99%	13.22%
Statutory Employer Rate	12.75%	12.75%
Contribution Sufficiency/(Deficiency)	(0.24%)	(0.47%)

Funding Sensitivity Projections

- Projections of estimated funded ratios for 30 years
  - Based on FY18 investment return scenarios ranging from -24% to +24%
  - Assumes Fund earns 7.75% per year in FY19 and each year thereafter
  - Additional projections assuming Fund earns 6.75% or 8.75% per year every year
  - Administrative expenses increase by 2.75% each year
  - All other experience is assumed to emerge as expected
- Includes contribution rates from HB 1134
  - Member rate is 11.75%
  - Employer rate is 12.75%
  - Member and Employer Contribution rates “sunset” back to 7.75% once the funded ratio reaches 100% (based on actuarial assets)

TFFR Funded Ratio: Actual and Projected



Projected Funded Ratios (AVA Basis) Actual Returns +1% or -1% of Assumed

Valuation Year	6.75% Return in Each Future Year	7.75% Return in Each Future Year	8.75% Return in Each Future Year
2017	64%	64%	64%
2018	64%	65%	65%
2019	64%	65%	65%
2020	65%	65%	66%
2021	65%	67%	68%
2022	65%	68%	70%
2027	66%	72%	79%
2032	68%	78%	91%
2037	69%	85%	103%
2042	69%	93%	112%
2047	69%	101%	123%

Deterministic Projections

- Segal currently provides Deterministic Projections to assess the long-term health of the TFFR plan.
- Projections provide information on what future funding might look like, and also their value relative to the current valuation date.
- Deterministic projections are based on a defined set of inputs.
  - Example: If investment actuarial assumption is met, then what is the result on funding?
  - A number of deviations to the actuarial assumptions are considered to demonstrate sensitivity.

Stochastic Projections

- Stochastic projections provide a view of expected outcomes with an element of probability attached.
  - Capital Market Assumptions are estimates for expected risk and return for a given set of asset classes, as well as the expected relationship between classes.
  - Portfolio investment returns are simulated using CMAs and the results of thousands of "trials" are tabulated into percentiles (95^{th}, 75^{th}, 50^{th}, 25^{th}, 5^{th}).

- Items can be modeled stochastically:
  - Expected investment return
  - Funded ratio
  - Actuarially determined contribution rate
  - Effective amortization period.

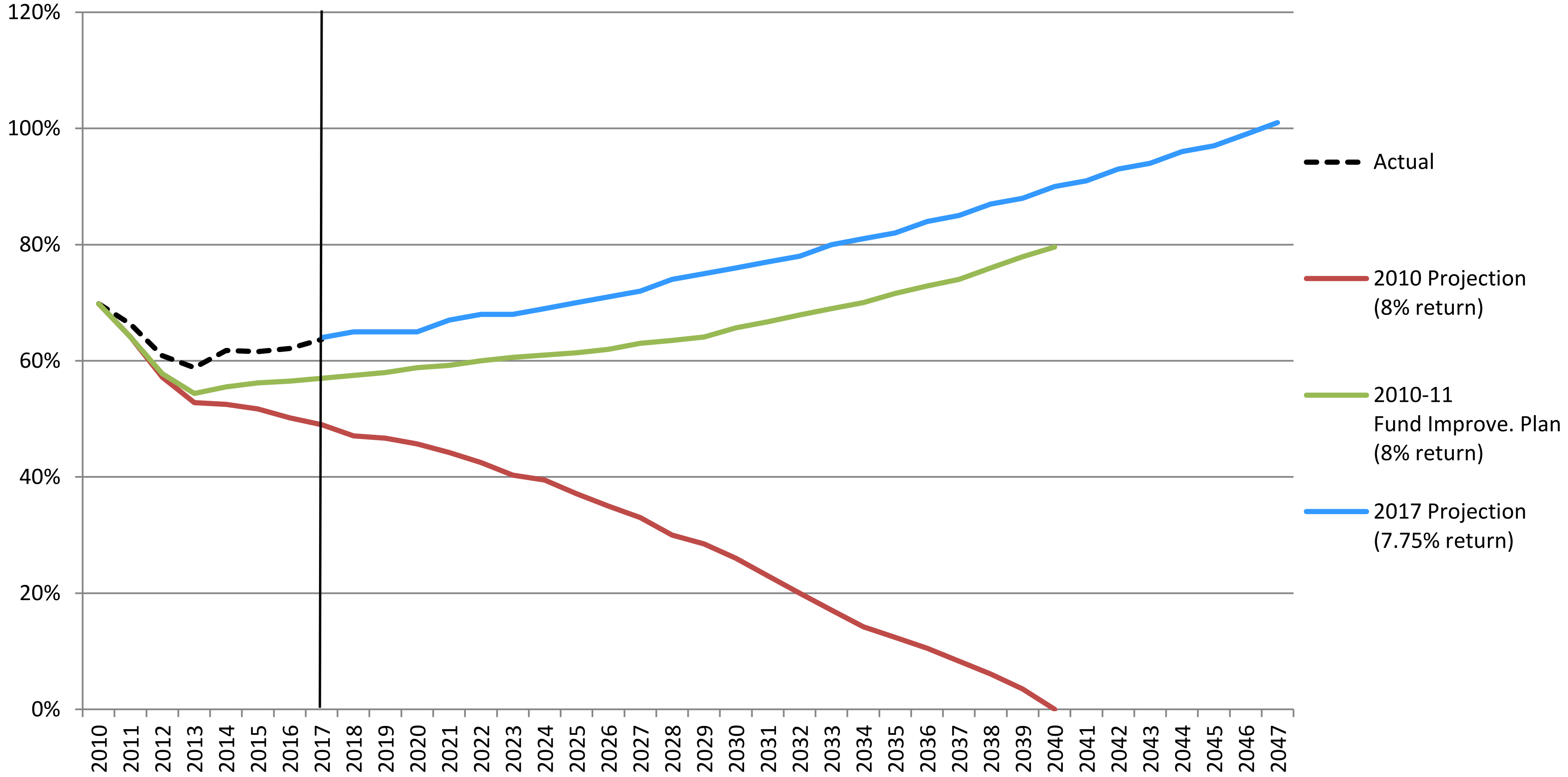
- **If Board is interested in additional stochastic projections, staff can work with Segal to outline project and get cost estimate.**

2019 Legislative Planning

2009-10 TFFR Funding Improvement Study Core Principles

- Restore the financial health of the TFFR plan for past, present, and future ND educators.
- Maintain adequate retirement security.
- Share responsibility for funding improvement with members and employers.
- Phase changes over time.
- Protect benefits of those employees closest to retirement.

TFFR Funded Ratio Projections Then (2010) and Now (2017)



2019 – Are Plan Changes Needed?

- **Long term funding projections (estimates) are positive** assuming investment returns meet actuarial assumptions (7.75%).

	6.75%	7.75%	8.75%
▪ 10 yrs	66%	72%	79%
▪ 20 yrs	69%	85%	103%
▪ 30 yrs	69%	101%	123%

- **Based on 2017 funding projections, no additional contribution or benefit changes are needed for funding purposes at this time.**

- **What could impact need for additional contribution or benefit changes?**
  - Future investment returns lower than expected.
  - Future actuarial experience – higher salaries, more retirements, improved mortality, etc. that negatively impact plan.
  - Future actuarial assumption changes – i.e. lowering investment return assumption.
  - Future legislative actions that might result in funding declines.

- **FUTURE UNKNOWN**

  Closely monitor events/actions that could affect TFFR funding levels.

2019 – IRS Technical Corrections

- **Internal Revenue Code compliance updates (REQUIRED)**

- 2017 IRS favorable determination letter was contingent on approval of certain proposed amendments in the 2019 legislative session.

- NDCC 15-39.1-34 Internal Revenue Code compliance. Clarification and additional detail on direct rollover provisions that apply to NDTFFR plan, namely the limitations on direct rollovers that apply to after-tax employee contributions; definitions for eligible rollover distribution, eligible retirement plan, and distributee.

2019 – Other Plan Design or Administrative Changes?

Most Common Member and Employer Concerns:

1. **High member and employer contribution rates that won't be reduced for many years** – current law requires rates to be reduced to 7.75% each when TFFR reaches 100% funded level.

2. **Retiree re-employment provisions** – current law requires retiree and employer contributions, maximum annual hours limit unless critical shortage area, and no benefit recalculation unless benefit is suspended.

1) Reduce Member and Employer Contribution Rates Sooner (NDCC 15-39.1-09)

Options that have been mentioned that could improve TFFR funding or change timing of rate reduction:

- Reduce contribution rates when plan reaches 80% or 90% funded level – current target is 100%
- Reduce interest earned on member contributions – currently 6%
- Reduce benefit formula multiplier – currently 2.0%
- Increase vesting period and final average salary calculation period – currently 5 years
- Extend normal (unreduced) retirement eligibility – currently minimum age 60 with Rule of 90 or age 65
- Other

2) Modify Retiree Re-employment Provisions
(NDCC 15-39.1-19.1 and 19.2)

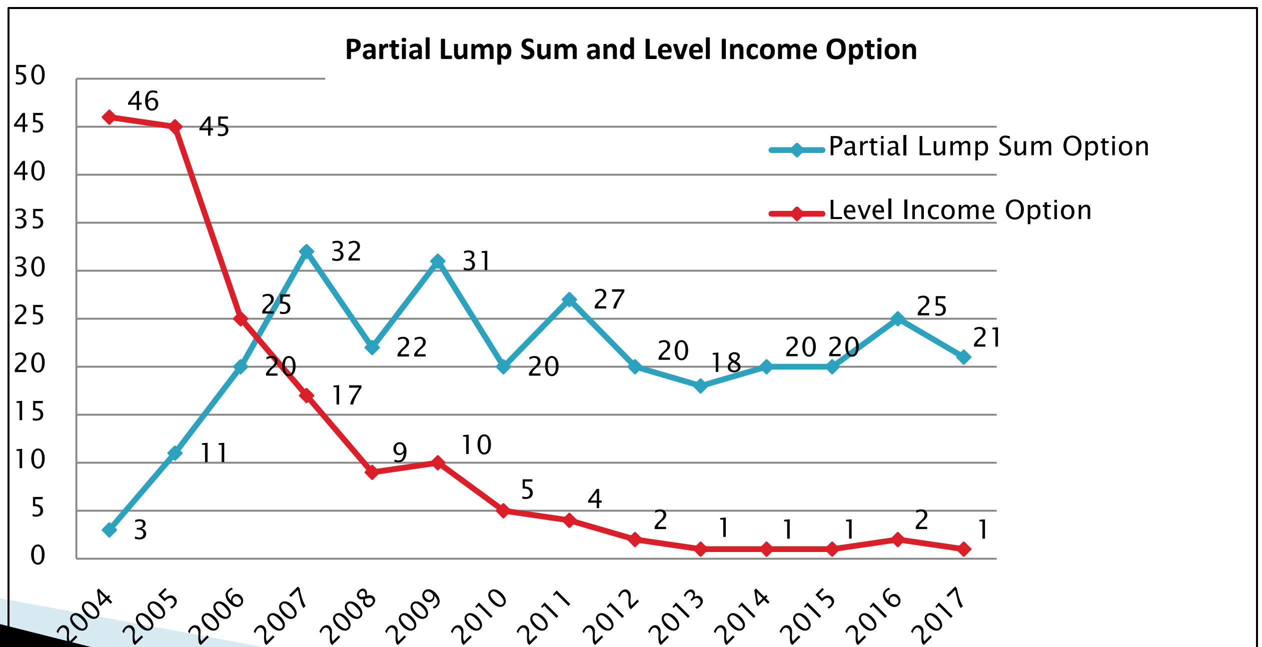
Options that have been mentioned:

- Eliminate payment of re-employed retiree and/or employer contributions
- Increase benefit for re-employed retiree based on additional salary and service
- Remove or increase maximum annual hours limit under General Rule
- Remove 1 year break-in- service for critical shortage area exemption
- Other

Note: Clarification of re-employment provisions needed if legislative changes proposed

2019 – Other Plan Design or Administrative Changes?

1) **Remove level income option from available benefit options (SLA, 100% & 50% J&S, 20 & 10 yr TC&L)** NDCC 15-39.1-16
   - As of 7/1/17, 540 retirees are receiving benefits under the level income option (effective 1989).
   - From 2004 – 2017, 290 members selected the partial lump sum option (effective 2004). During that time period, 169 members selected the level income option.
   - Since the partial lump sum option (PLSO) became effective, the number of new retirees who have selected the level income option has dramatically declined.



2019 – Other Plan Design or Administrative Changes?

2) **Clarify or change definition of pensionable salary to address individual salary spiking concerns** (NDCC 15-39.1-04-10)
   - Salary caps or Final Average Salary limits of X%
   - Within 5 years of retirement, salary increases above X% are not pensionable
   - SD pays actuarial cost of salary increases above X%

3) **Amend service credit and benefit calculation provisions of full time president of professional educational organization** (NDCC 15-39.1-24-6)
   - Amend to base contributions and benefits on salary earned as teacher prior to being elected state president; or
   - Eliminate president of professional educational organization service purchase option or alternative membership option.

2019 – Other Plan Design or Administrative Changes?

4) **Add fiduciary language to TFFR board authority provisions (NDCC 15-39.1-05.2)**
   - Prudent investor rule and exclusive benefit provisions are found in SIB statutes (NDCC 21-10).

5) **Remove outdated provisions and clean up TFFR statutes**
   - Old law – college teachers and membership options (NDCC 15-39.2)
   - Grandfathered members – NDU, NDCEL, NDHSAA, etc. (only a few still in plan) (NDCC 15-39.1-04-12)
   - Board composition (NDCC 15-39.1-05.1)
   - Other

2019 – Other Plan Design or Administrative Changes?

6) Add language requiring state pension forfeiture if member is convicted of felony (new provision). Many states have laws that require a public employee or public official who commits a felony related to his or her official duties to forfeit benefits under the state retirement system.

- Some pension forfeiture laws cover crimes or felonies related to official public duties only. Others may include all or only certain crimes or felonies committed.
- Some laws require pension forfeiture for crimes committed during time of public service only; others may include crimes committed any time.
- Many variations and options.

Legal and administrative considerations

- Could provisions be effective for new members only, OR active and retired members hired before adoption?
- How would TFFR track crimes committed by members?
- Other

7) Other plan design or administrative changes?

2019 Legislative Planning

- Input from Member and Employer Interest Groups
  - ND United — NDRTA
  - NDCEL — NDSBA
- TFFR Board Discussion
- Information requests for future board meeting
- Other Board Directives

TFFR Ends
Annual Review
Year Ended June 30, 2017

The information provided below indicates that the TFFR ends policies formally adopted by the TFFR Board and accepted by the SIB are being implemented.

Ends Policy: **Membership Data and Contributions**

Ends: Ensure the security and accuracy of the members' permanent records and the collection of member and employer contributions from every governmental body employing a teacher.

- **Member and Employer Information**

  The CPAS pension administration software and FileNet document management software has been used for twelve years and both continue to meet our needs. In the past year, all employers with the capability to submit monthly TFFR reports electronically have been transitioned to TFFR Employer Online Services. The Member Online Services application is scheduled to move into production in FY18. Security of TFFR data is a high priority and staff annually completes cyber security training.

- **Collections and Payments**

  Collected member and employer contributions totaling $165.4 million from 215 employers and $2.6 million from members for the purchase of service credit.

  Paid out $191.1 million in pension benefits and $5.4 million in refunds and rollovers totaling $196.5 million for the year.

  About 85% of employers electronically report contributions to TFFR. This comprises over 98% of the active membership.

  As of June 30, 2017, 182 employers are reporting using TFFR Employer Online Services.

  Assessed 27 reporting penalties and withheld foundation payments from one school district. TFFR waived 9 of the 27 penalties. Employer reporting penalties include late reporting of contributions and failure to provide documentation in a timely manner (e.g. new member forms, return to teach forms, employer compliance audit documentation.)

  7 employers modified employer payment plan model election.

- **Employer Summary Report and Member Statements**

  Mailed 13,089 annual benefits statements to non-retired members in August
  Mailed 8,265 annual statements to retired members in December
  Mailed FY2017 Employer Summary Report to each employer in August 2017

- **Employer Outreach Programs & Communications**

  Met with school board members, business managers, and software vendors at the 2016 School Board and School Business Manager Association Annual Conference.

  Presented TFFR employer reporting requirements to 141 school district business managers at four statewide workshops.

  Completed two new business manager workshops attended by Langdon, SEEC, Underwood, West Fargo, and Ft. Yates schools.

  GASB 68 2016 data updated and added to website. Also updated the GASB 68 Q & A, Overview, and Talking Points documents.

  Updated Employer Guide on the website and emailed all employers.

  Briefly employer newsletter (4 publications sent electronically)

  Employer webcast added to online library – Employer Reporting Basics.

Ends Policy: **Member Services**

Ends: Provide direct services and public information to members of TFFR.

- **Outreach Program Statistics**

  935 attended outreach programs (plus convention participants)
  Retirement Services staff traveled 2,811 miles

- **Retirement Education Workshops**

  107 attended
  2 locations – Minot & West Fargo

  Retirement Education Workshops are generally held at two sites each year in July and rotate between Bismarck, Minot, Fargo, and Grand Forks. Additional workshops will be added if requested by an employer and minimum attendance can be met.

- **Retirement 101 Workshops**

  8 attended
  McKenzie Co School

- **Group Counseling Sessions**

  351 attended
  8 locations – Minot, Grand Forks, Watford City, West Fargo, Devils Lake, Valley City, Dickinson, and Bismarck

- **Local Office Counseling –** 346 members

- **Group Presentations**

  123 attended

  NDRTA Convention
  ND-United Rep Assembly
  Mandan In-Service

- **Conferences and Conventions**

  ND Retired Teachers Convention – Bismarck
  ND School Board Convention – Bismarck
  ND Career and Technical Education Convention – Bismarck
  NDCEL Annual Conference – Bismarck
  ND-United Rep Assembly – Bismarck

- **Member Communications**

  Report Card non-retired newsletter (2 publications)
  Retirement Today retiree newsletter (2 publications)
  Updated brochures, forms, and Member Handbook
  Updated TFFR Fast Facts handout
  Created the following webcasts: About Your Retirement Benefit Plan, Funding Your TFFR Plan, Types of Service Credit to Purchase, How to Purchase Service Credit, Retirement Benefit Options

- **NDRIO Website**

  NDRIO web site was visited by 16,541 users a total of 27,253 times. The average length of each visit was just under three minutes.

Ends Policy: **Account Claims**

Ends: Ensure the payment of claims to members of TFFR.

- **Annuity Payments**

  Distributed $191.1 million in pension benefits to 8,501 retired members and beneficiaries. Of the total, about 99% of the payments were deposited via electronic funds transfer.

- **Monthly Payroll Deductions** (July 1, 2017 payroll – total 8,455)

Federal tax withholding	6,557	77%
ND state tax withholding	5,285	63%
PERS health insurance	679	8%
PERS dental insurance	403	5%
PERS vision insurance	190	2%
PERS life insurance	28	<1%

- **Refunds, Rollovers & Transfers**

  Distributed refund and rollover payments of $5.4 million to 264 participants during the fiscal year. Approximately 41% of the refunding members rolled over their refund payment to an IRA or another eligible plan.

- **Processed Claims for Benefits**

Refunds	157
Rollovers	107
Retirements	391
Disabilities	4
Survivor annuitants	3
Continuing annuitants	49

- **Member Account Activity**

New members	932
Deaths	204
Pop ups	39
Purchase requests	151
Retiree Payroll Notices	1,606

Ends Policy: **Trust Fund Evaluation/Monitoring**

Ends: Ensure actuarial consulting and accounting services are provided to the retirement program. The TFFR Board of Trustees will select the independent actuary for consulting and actuarial purposes and direct a contract to be executed.

- **Actuarial Services**

  The annual actuarial valuation for July 1, 2017 was presented to the TFFR Board by Segal on October 26, 2017.

- **External Audit**

  An unqualified opinion was issued by independent auditors, Clifton Larson Allen, LLP, regarding RIO's financial statements for the year ending June 30, 2017. Clifton Larson Allen, LLP presented the report to the SIB Audit Committee on November 16, 2017.

- **Internal Audit**

  The annual audit activities report was presented to the TFFR Board on September 22, 2017. The report included information about TFFR employer compliance audits, benefit payments audit, file maintenance audit, and the salary verification project.

- **Other**

  Received Certificate of Achievement in Financial Reporting from GFOA for June 30, 2016, Annual Financial Report.

  Received 2017 recognition award for pension plan administration from the Public Pension Coordinating Council.

TFFR Retirement Statistics

>Participation in Outreach Programs

>Service Purchase Statistics

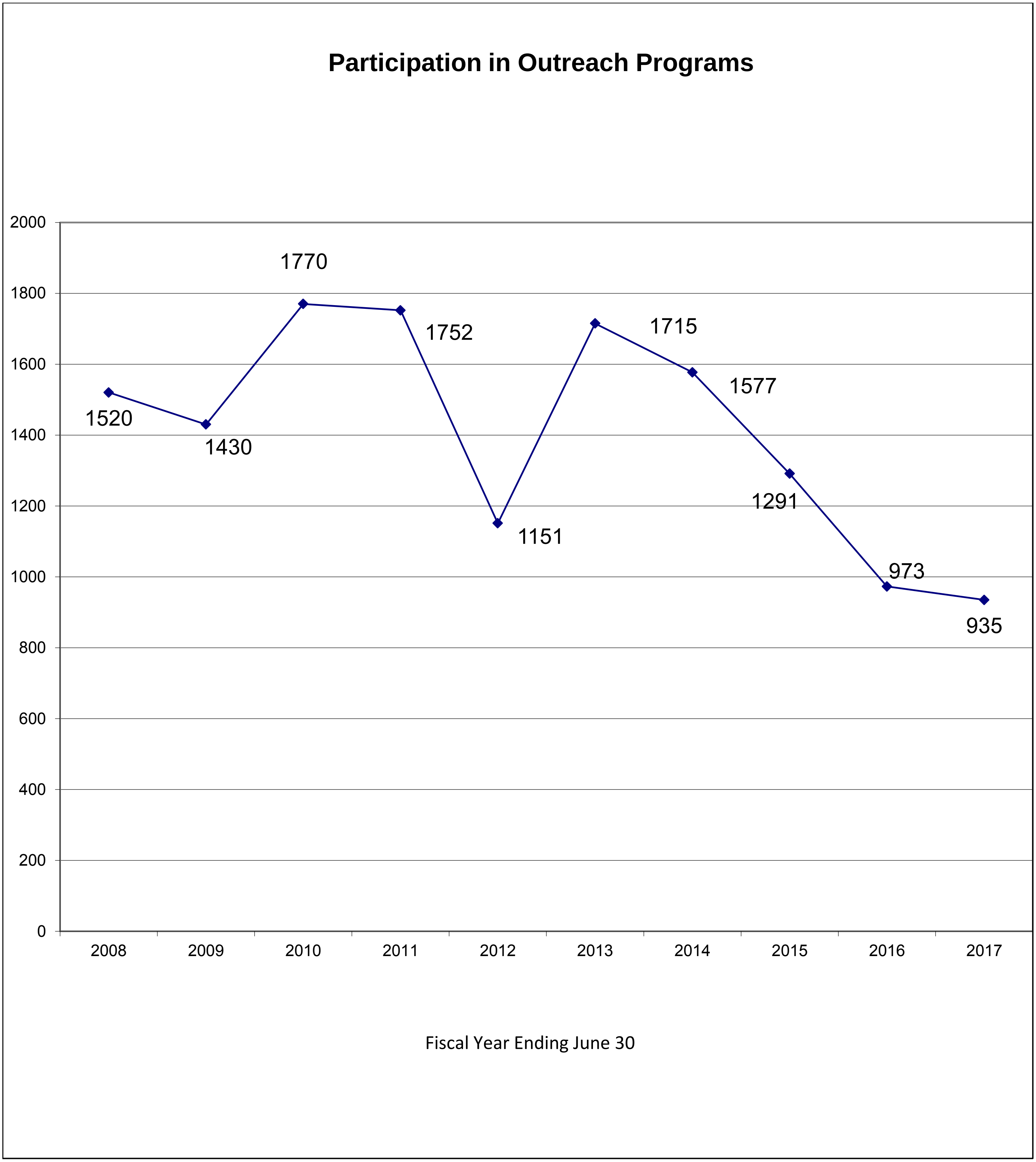
>Active Membership Tier Statistics

>Service Retiree History & Option Usage

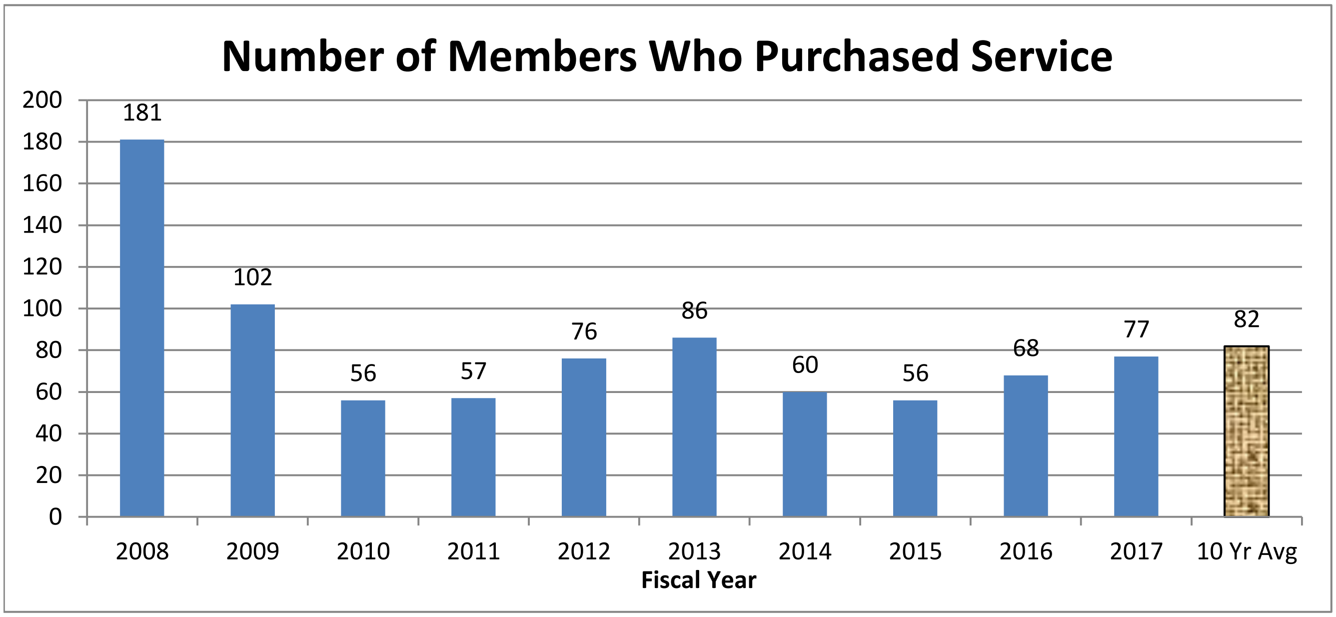
>Retiree Statistics

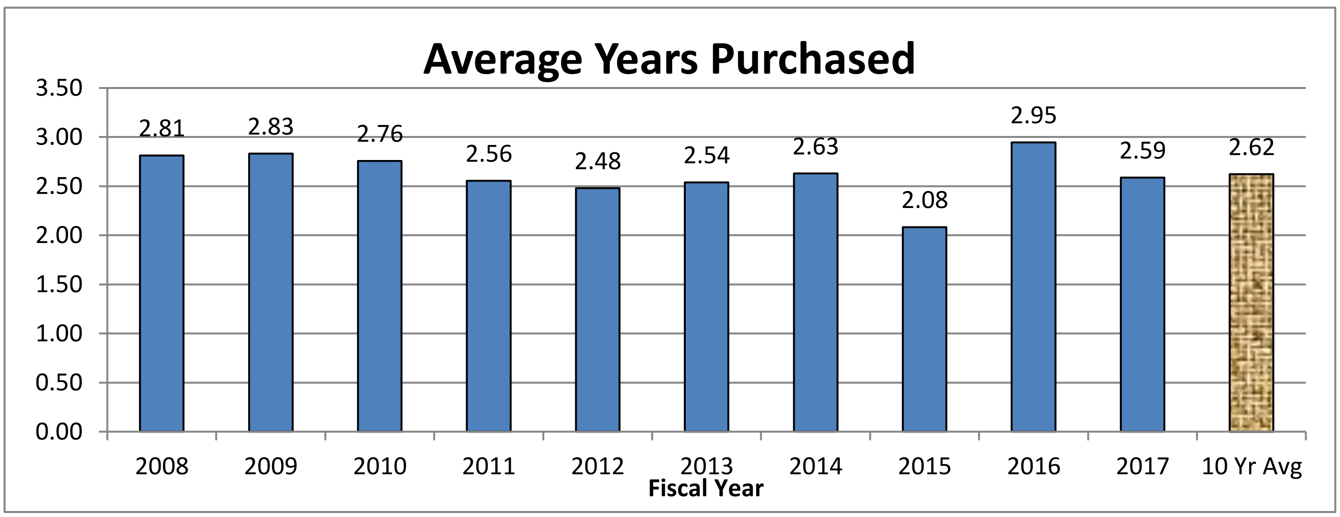
>Disability Retirements

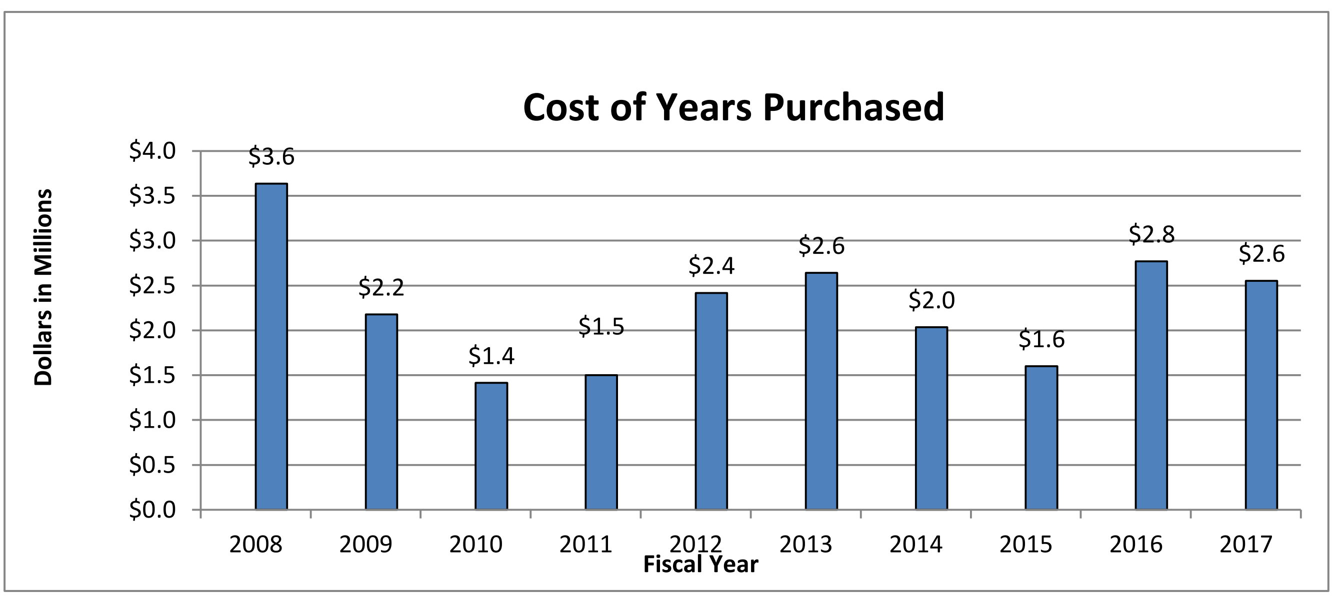
>Employer History & Current Employer Payment Model Statistics

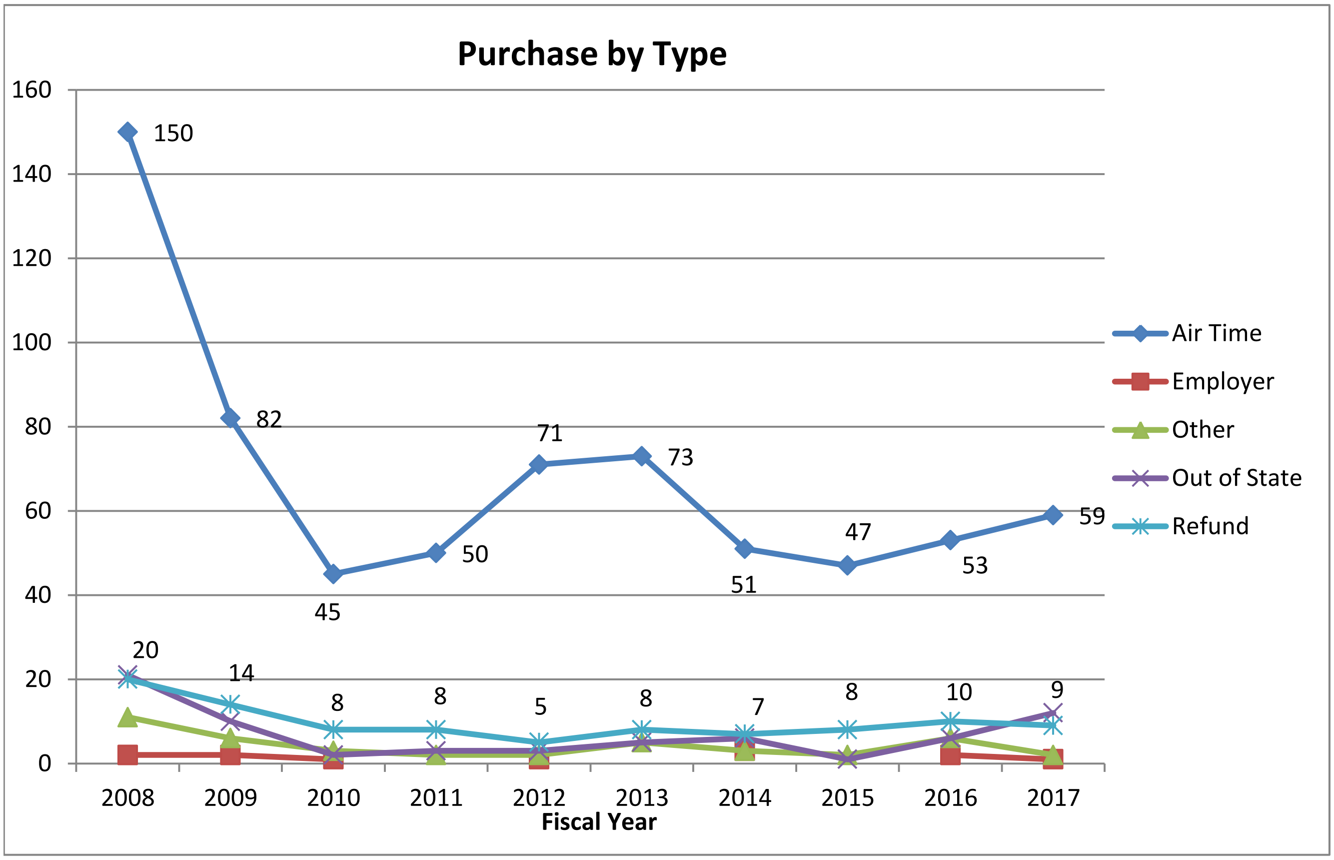

Participation in Outreach Programs
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1520
1430
1770
1752
1151
1715
1577
1291
973
935
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fiscal Year Ending June 30

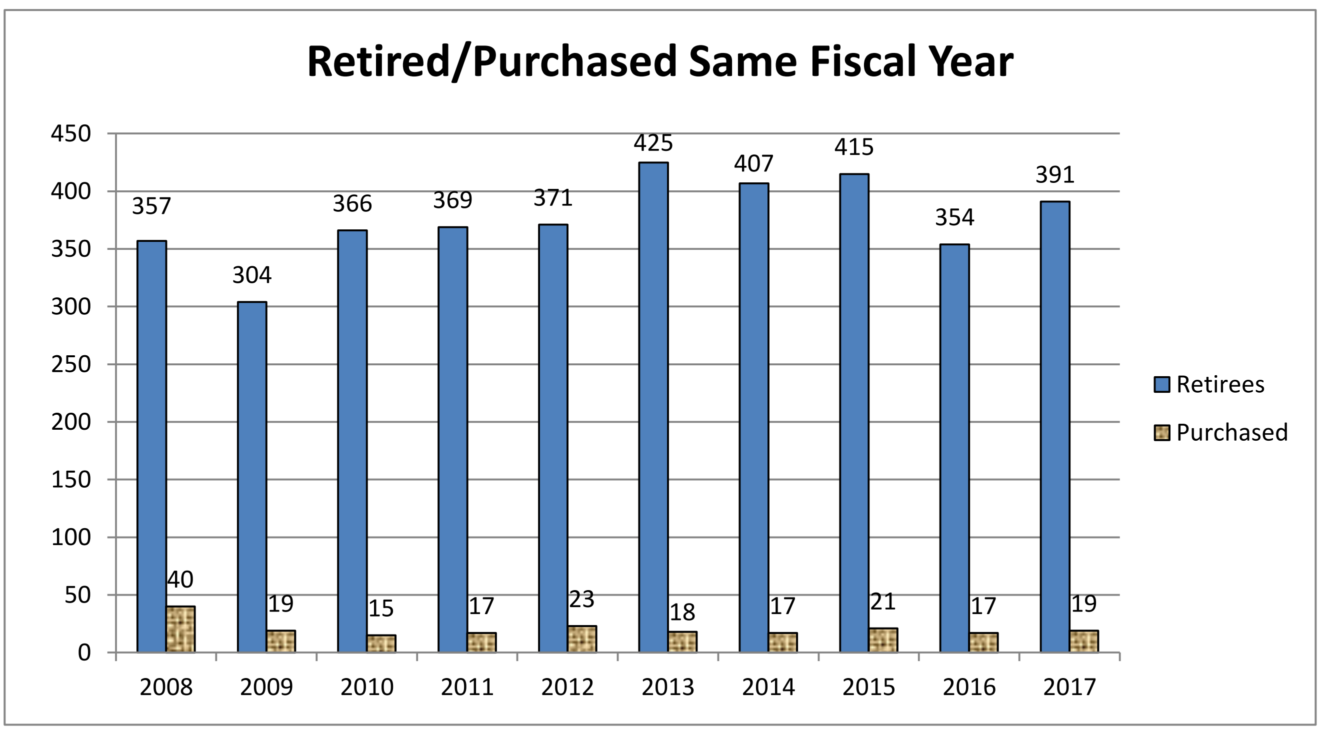
Service Purchase Statistics - 2017



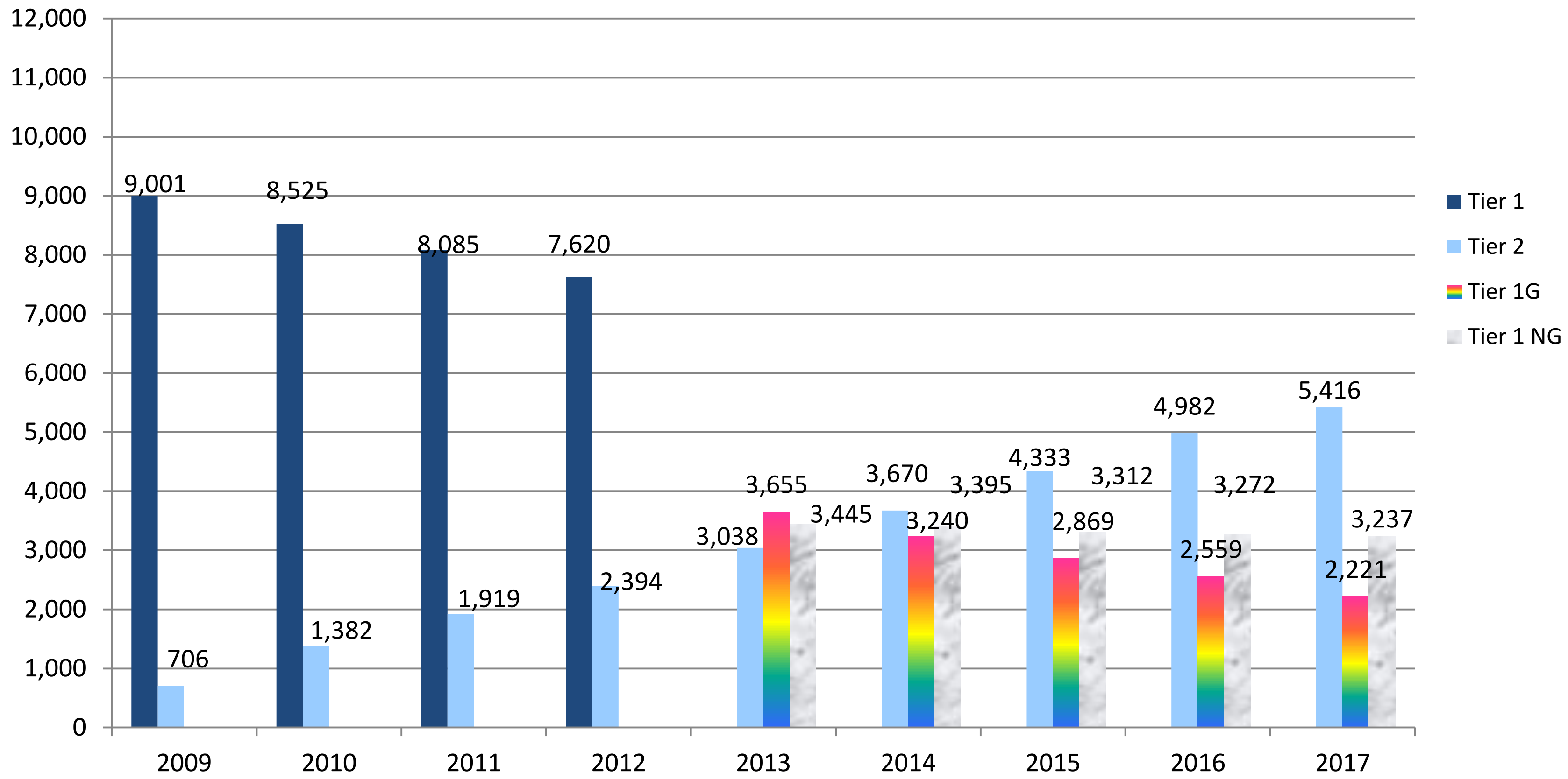


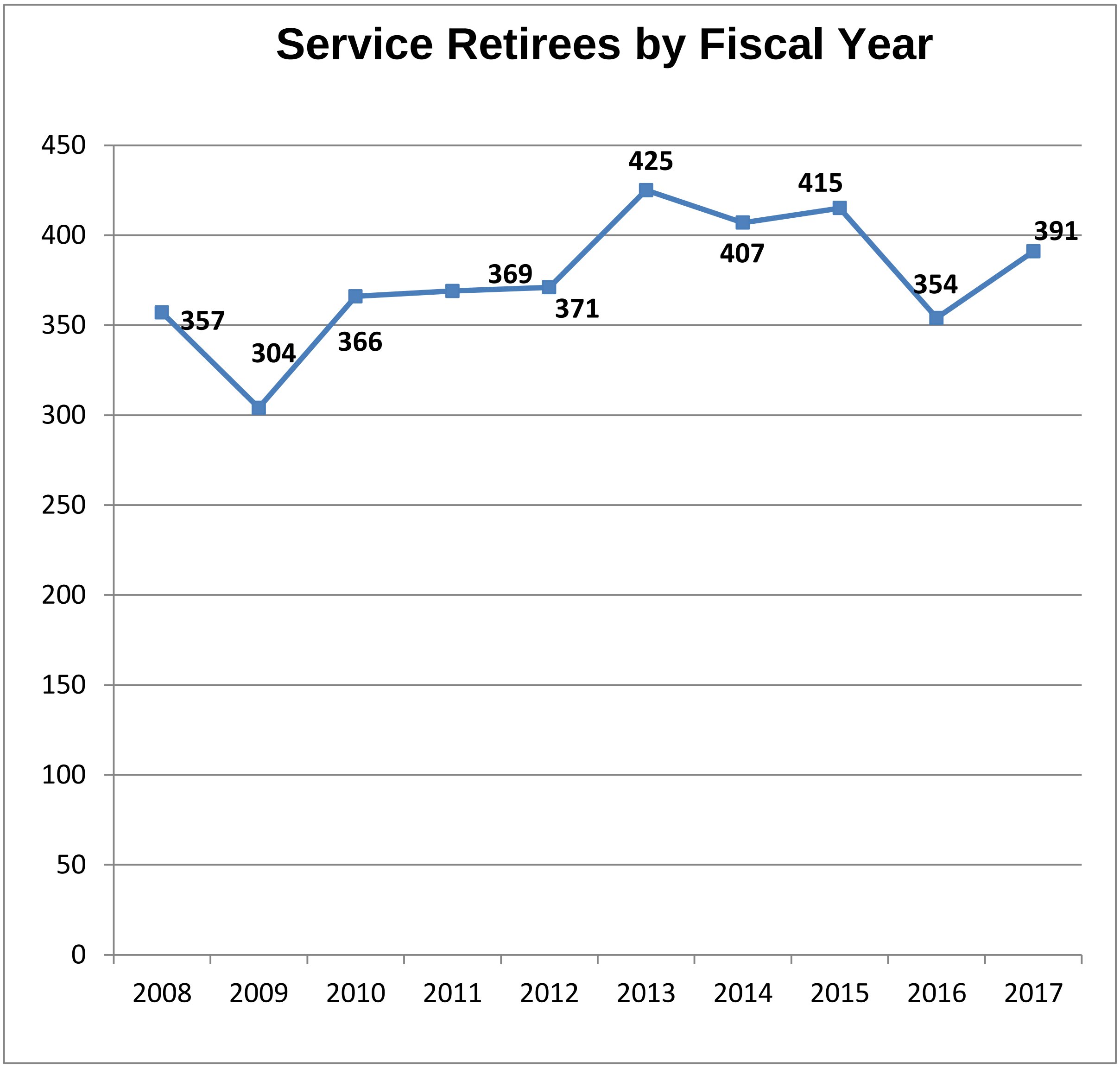



Purchase by Type
160
140
120
100
80
60
40
20
0
150
82
45
50
71
73
51
47
53
59
20
14
8
8
5
8
7
8
10
9
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Fiscal Year
Air Time
Employer
Other
Out of State
Refund


Retired/Purchased Same Fiscal Year
450
400
350
300
250
200
150
100
50
0
357
304
366
369
371
425
407
415
354
391
40
19
15
17
23
18
17
21
17
19
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Retirees
Purchased

ACTIVE MEMBERSHIP
TIER STATISTICS

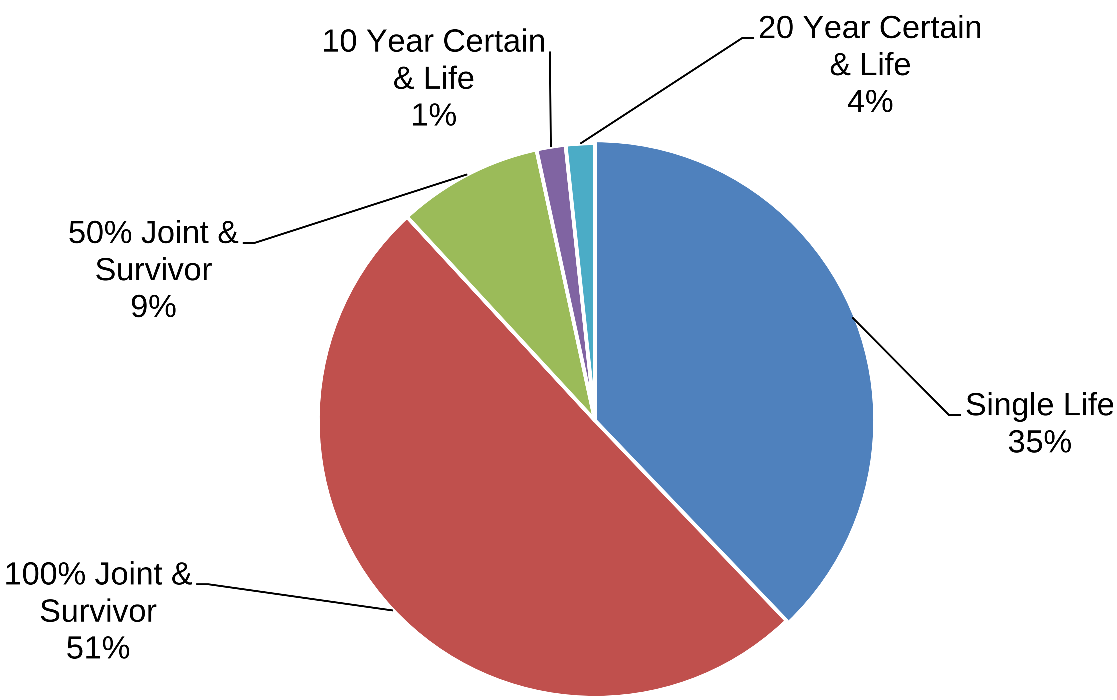



Service Retirees by Fiscal Year
450
400
350
300
250
200
150
100
50
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
357
304
366
369
371
425
407
415
354
391

Service Retirement Options

2016-17

Retirement Option	Number
Single Life	137
100% Joint & Survivor	198
50% Joint & Survivor	36
10 Year Certain & Life	6
20 Year Certain & Life	14
Total	**391**



Note: Of total, 1 member (<1%) selected level income option.

Of total, 21 members (5%) selected partial lump sum option.

TFFR RETIREE STATISTICS
OCTOBER 2017

Data Selection

■ 8,501 retired members and beneficiaries as of July 2017 based on data from the valuation file.

■ Selected various categories of retiree data and grouped data 3 ways.

TFFR Retiree
Statistics by Fiscal Year

Fiscal Year of Retirement Ending June 30	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
pre-1979	$ 491	$ 7,924	23.7	58.6	89.3	95
1980	$ 634	$ 12,246	29.0	59.7	93.2	17
1981	$ 596	$ 13,726	26.0	59.5	95.0	21
1982	$ 668	$ 18,493	25.9	60.2	91.8	22
1983	$ 423	$ 10,862	21.6	58.2	89.2	9
1984	$ 813	$ 20,111	30.2	61.8	93.2	53
1985	$ 865	$ 22,727	29.3	60.0	89.3	19
1986	$ 1,010	$ 25,566	31.9	61.5	91.5	73
1987	$ 832	$ 24,041	26.1	59.6	88.9	21
1988	$ 1,046	$ 26,111	29.3	60.7	88.7	97
1989	$ 910	$ 26,203	25.5	58.2	85.7	28
1990	$ 1,107	$ 27,588	29.8	59.3	85.6	204
1991	$ 991	$ 28,247	26.3	59.9	85.1	81
1992	$ 1,213	$ 31,026	30.1	59.2	83.3	159
1993	$ 1,137	$ 32,492	25.5	58.5	81.5	68
1994	$ 1,274	$ 31,956	28.1	59.5	82.8	242
1995	$ 1,262	$ 32,696	27.7	59.0	80.1	188
1996	$ 1,276	$ 33,119	27.4	58.5	79.3	153
1997	$ 805	$ 26,846	19.6	58.2	78.5	74
1998	$ 1,493	$ 34,333	29.0	59.0	78.2	320
1999	$ 1,096	$ 33,497	21.2	58.6	76.5	91
2000	$ 1,688	$ 37,757	29.1	58.8	76.2	394
2001	$ 1,381	$ 38,009	23.1	57.3	73.4	80
2002	$ 1,743	$ 39,290	28.3	58.3	73.7	480
2003	$ 1,735	$ 40,630	27.2	58.2	72.3	278
2004	$ 1,791	$ 41,488	27.6	58.3	71.4	345
2005	$ 1,923	$ 43,313	27.7	58.5	70.8	349
2006	$ 1,935	$ 44,669	27.4	58.9	69.8	366
2007	$ 2,092	$ 47,788	27.8	58.8	68.9	350
2008	$ 1,988	$ 46,014	26.4	59.4	68.6	361
2009	$ 2,126	$ 49,296	27.1	59.1	67.3	341
2010	$ 2,152	$ 50,074	26.2	60.4	67.5	334
2011	$ 2,190	$ 50,949	25.9	60.5	66.3	401
2012	$ 2,330	$ 53,766	26.7	60.7	65.7	368
2013	$ 2,617	$ 58,166	27.6	60.6	64.8	459
2014	$ 2,627	$ 58,976	27.7	61.2	64.5	419
2015	$ 2,591	$ 58,400	27.1	61.0	63.3	387
2016	$ 2,910	$ 64,633	27.3	61.5	62.7	394
2017	$ 2,888	$ 64,923	27.4	61.6	61.9	326
2018	$ 4,180	$ 96,410	27.9	61.5	61.5	34
All FY	**$ 1,950**	**$ 45,144**	**27.4**	**59.6**	**71.6**	**8,501**

Note: 2018 is a partial year (34 retirees) and includes July 1, 2017 retirees. These retirees averages are higher since count includes primarily administrators.

TFFR Retiree
Statistics by Formula

Fiscal Year of Retirement Ending June 30	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
Old formulas	$ 491	$ 7,924	23.7	58.6	89.3	95
1979-1983 or 1.00%	$ 606	$ 14,508	26.1	59.6	92.8	69
1983-1985 or 1.05%	$ 827	$ 20,802	29.9	61.4	92.2	72
1985-1987 or 1.15%	$ 970	$ 25,225	30.6	61.0	90.9	94
1987-1989 or 1.22%	$ 1,016	$ 26,131	28.4	60.2	88.0	125
1989-1991 or 1.275%	$ 1,074	$ 27,775	28.8	59.5	85.4	285
1991-1993 or 1.39%	$ 1,190	$ 31,465	28.7	59.0	82.8	227
1993-1997 or 1.55%	$ 1,218	$ 31,863	26.9	59.0	80.7	657
1997-1999 or 1.75%	$ 1,405	$ 34,148	27.2	58.9	77.8	411
1999-2001 or 1.88%	$ 1,636	$ 37,800	28.1	58.5	75.7	474
2001-present or 2.00%	$ 2,250	$ 51,225	27.2	59.9	67.4	5,992
All Formulas	**$ 1,950**	**$ 45,144**	**27.4**	**59.6**	**71.6**	**8,501**

TFFR Retiree Statistics
By Retirement Type

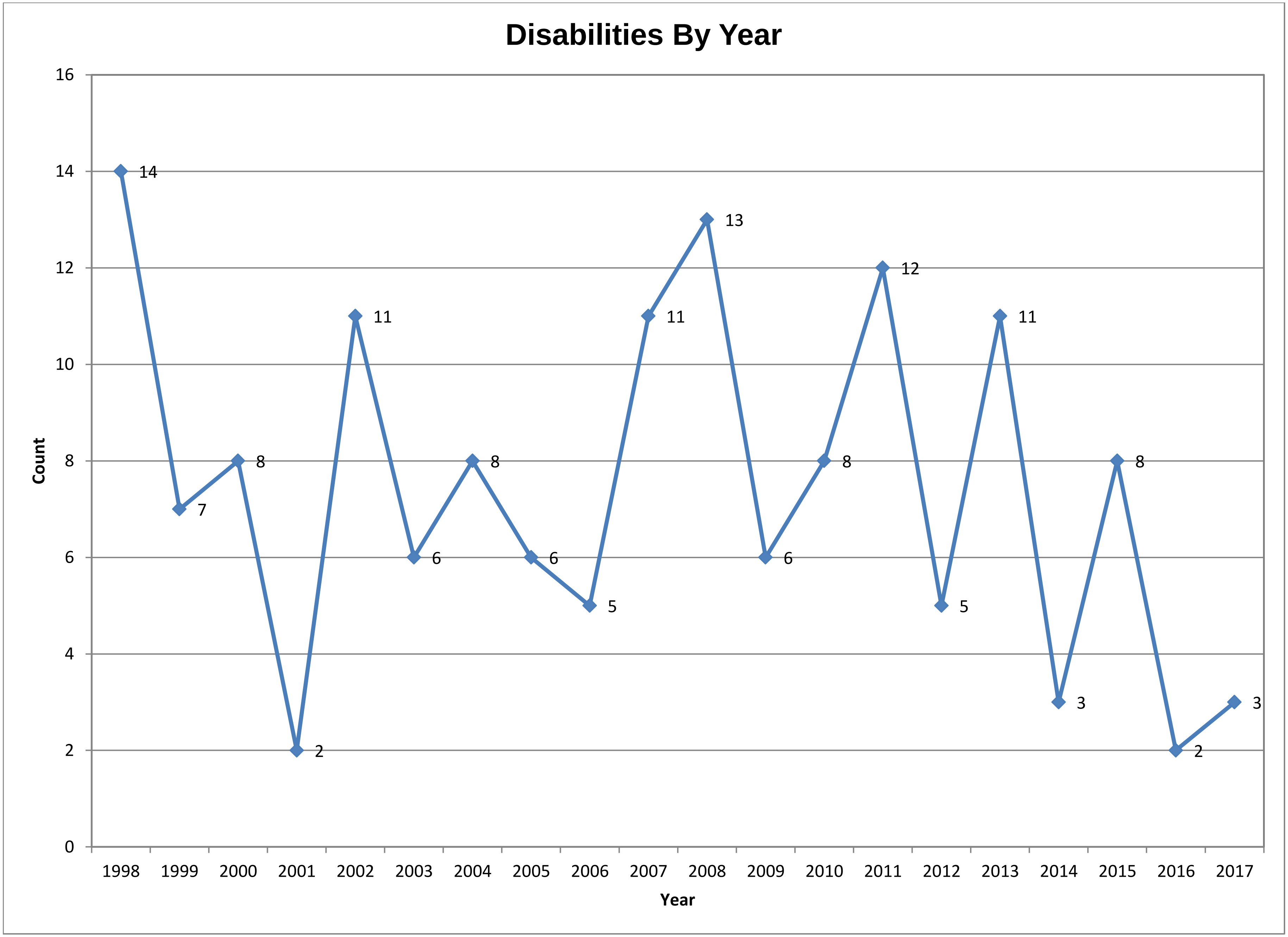
Type	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
Death	$ 1,245	$ 35,962	27.7	58.9	74.9	683
Disability	$ 1,222	$ 37,992	15.0	50.3	63.4	128
Early	$ 685	$ 33,805	14.7	60.2	72.8	955
Normal	$ 2,221	$ 47,826	29.5	59.8	71.3	6,709
QDRO	$ 626	$ 46,127	9.5	57.8	68.0	26
All Types	**$ 1,950**	**$ 45,144**	**27.4**	**59.6**	**71.6**	**8,501**

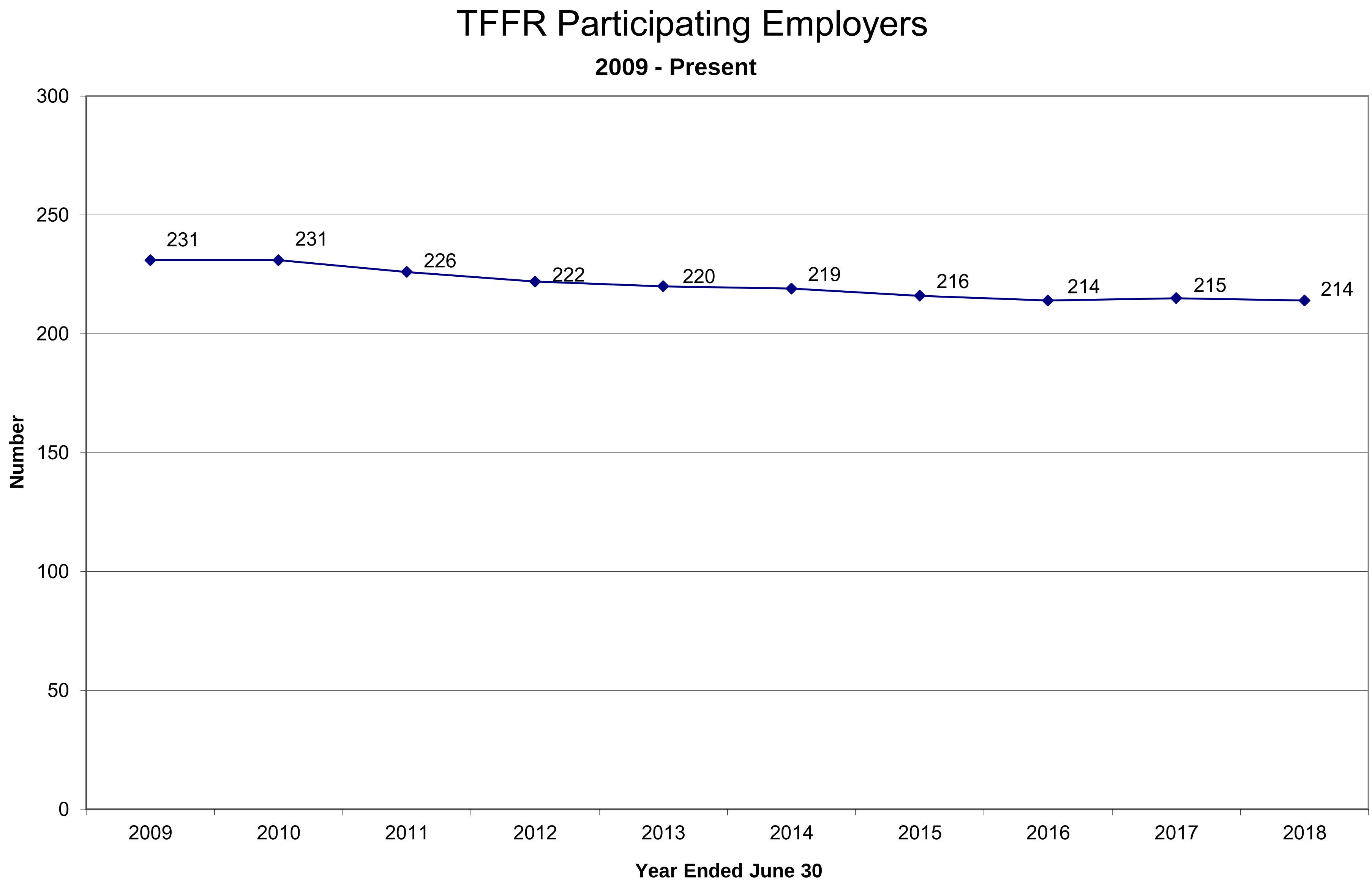
Disability Summary -- 1998 - 2017

• Total disabilities approved since 1998 - 2017	149*
Of 149, number of physical health disabilities:	129
Of 149, number of mental health disabilities:	20
• Average number of disabilities approved per year:	7
• Of 149, number that are living and drawing benefits:	100
Of 149, number that are living and returned to work:	7
Of 149, number that are deceased:	42
• Of 149, option selected was:	
Count of Single Life:	98
Count of 100% Joint & Survivor:	33
Count of 50% Joint & Survivor:	13
Count of 5 Year Certain & Life:	1
Count of 10 Year Certain & Life:	3
Count of 20 Year Certain & Life:	1
• Of 100 living and drawing benefits:	
Average service credit in years:	15.3
Average age in years:	62
Average monthly benefit:	$1,357
Average years benefit was received:	10.2
• Of 7 living and returned to work:	
Average service credit in years:	15.2
Average age in years:	59
Average monthly benefit:	$1,366
Average years benefit was received:	5.4

*Approved disabilities removed from total if they returned to employment then refunded or retired.

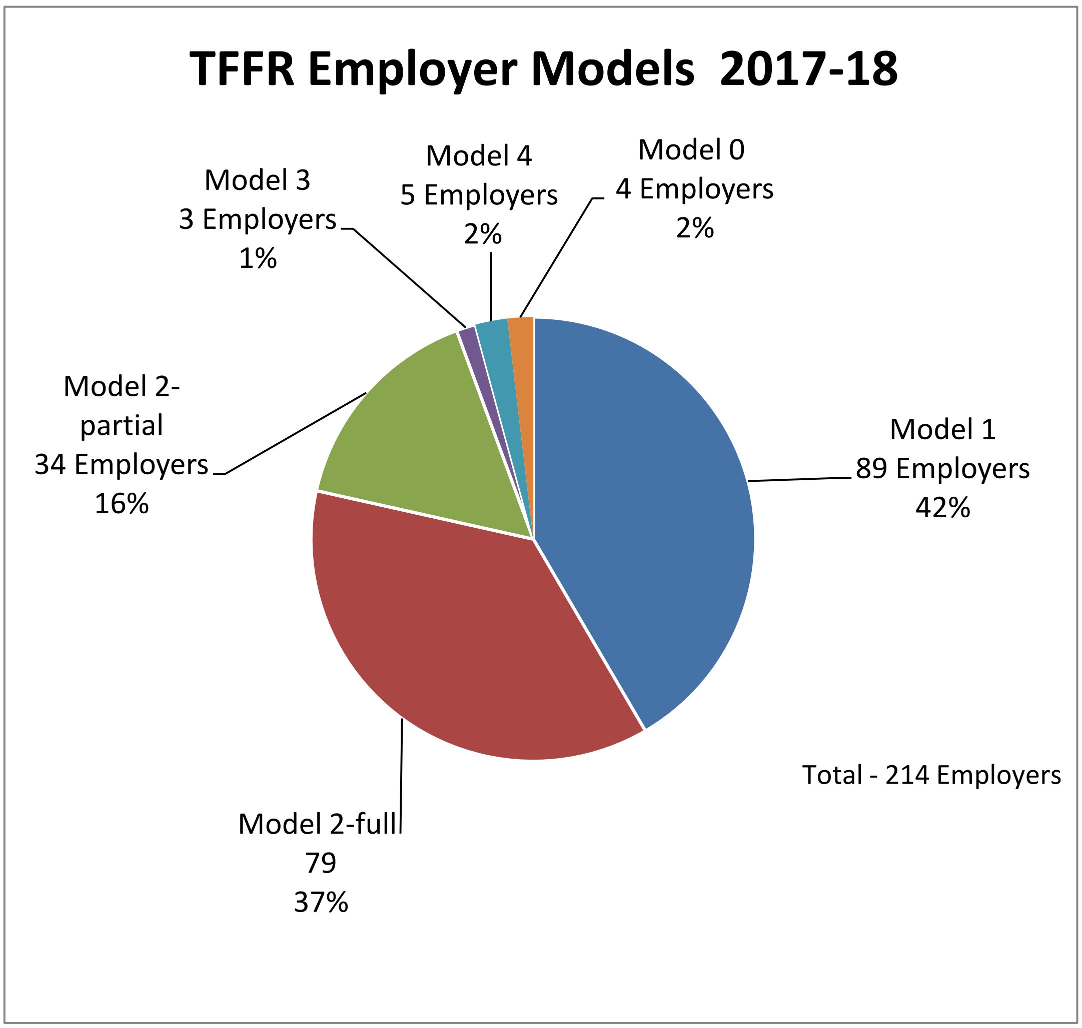
9/12/2017


Disabilities By Year
Count
Year
0
2
4
6
8
10
12
14
16
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
14
7
8
2
11
6
8
6
5
11
13
6
8
12
5
11
3
8
2
3


TFFR Participating Employers
2009 - Present
Number
300
250
200
150
100
50
0
231
231
226
222
220
219
216
214
215
214
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Year Ended June 30

Model Usage 2017-2018

	Employers
Model 1	89
Model 2-full	79
Model 2-partial	34
Model 3	3
Model 4	5
Model 0	4
Total	214



RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES
2017-2018 Second Quarter Audit Activities Report
October 1, 2017 – December 31, 2017

The audit objective of Audit Services is twofold: first, to provide comprehensive, practical audit coverage of the Retirement and Investment Office (RIO) programs; second, to assist RIO management and the State Investment Board (SIB) by conducting special reviews or audits.

Audit coverage is based on the July 1, 2017 through June 30, 2018 work plan approved by the SIB Audit Committee. The audit activities undertaken are consistent with the Audit Services charter and goals, and the goals of RIO. To the extent possible, our audits are being carried out in accordance with the International Standards for the Professional Practice of Internal Auditing. Audit effort is being directed to the needs of RIO and the concerns of management and the SIB Audit Committee.

Retirement Program Audit Activities

- **TFFR Employer Audit Program**

We examine employer reporting to the Teachers' Fund for Retirement (TFFR) to determine whether retirement salaries and contributions reported for members of TFFR are in compliance with the definition of salary as it appears in NDCC 15-39.1-04(10). Other reporting procedures reviewed during the audit process are calculation of service hours and eligibility for TFFR membership. A written report is issued after each audit examination is completed. The TFFR Employer Audit Program includes Compliance Audits, Not in Compliance (NIC) Reviews, and Special Audits requested by Retirement Services.

Status of TFFR Employer Audits as of December 31, 2017:

- Eight (8) employer audits had been completed.
- One (1) employer audit was in progress.
- Six (6) employer audits were pending but not yet started.

This is an area that requires special emphasis due to the level of risk identified through previous audit results. Our long-range plans include auditing each employer over an eight year period.

- **Benefit Payments Audit**

A review of deaths, long outstanding checks, and long term annuitants is completed on an annual basis to verify that established policies and procedures are being followed by the staff of Retirement Services. The 2016-2017 Benefit Payments Audit was completed and a report was issued on October 30, 2017.

- **TFFR File Maintenance Audit**

A review of changes made to TFFR member account data by Retirement and Investment Office employees is reviewed on a quarterly basis. The TFFR File Maintenance Audit for the third quarter of 2016- 2017 was completed at the end of the first quarter with a final report issued October 2, 2017.

Administrative and Investment Audit Activities

- **Executive Limitation Audit**

On an annual basis, Audit Services reviews the Executive Director/CIO's level of compliance with SIB Governance Manual Executive Limitation Policies A- 1 through A-11. Executive Limitation A-2 references staff relations. Normally, in an effort to gain insight into the relationship which exists between the Executive Director/CIO and staff, an organization wide employee survey is conducted to provide employees the opportunity to evaluate the effectiveness of the Executive Director/CIO in the areas of leadership, communication, and valuing employees. Per the SIB Board, the Executive Director/CIO opted for staff to participate in the State Survey. This survey contained most of the same questions as the employee survey issued last year. The State Survey was administered in December 2017. The results will be issued to the SIB in the January 2018 Board materials.

Professional Development/CE/General Education

Audit Services continued its participation with the Institute of Internal Auditors (IIA) Central NoDak Chapter by attending the November 2017 Fall Seminar on IT Auditing for Non IT Auditors and Continuous Auditing & Data Analytics with Root Cause Analysis. Audit also attended the November monthly IIA meeting which was a work session on quality assurance reviews.

RIO had staff training on cyber security issues impacting organizations and individuals from Tony Aukland of the State and Local Intelligence Center (Cyber).

Summary

Audit effort is directed to activities that are of greatest concern to the SIB Audit Committee, RIO Management, and our external audit partners. Audit Services will continue to work closely with the SIB Audit Committee, RIO Management, and our external audit partners to continue to improve overall efficiency, effectiveness, and economy of total audit activity.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 18, 2018**

SUBJ: **2017 CAFR and PPCC Award**

The 2017 NDRIO Comprehensive Annual Financial Report (CAFR) has been completed. The report contains detailed investment, financial, actuarial, and statistical information about the TFFR and SIB programs. TFFR board members were sent a link to the 2017 CAFR in December. You can view, download or print the report from the RIO website. If you would like to have a bound paper copy of the CAFR, please let us know and we will bring one to the meeting.

Please notice that the Government Finance Officers Association (GFOA) has awarded a Certificate of Achievement for Excellence in Financial Reporting to RIO for the past 19 years (see 2017 CAFR, p. 13). In order to receive the award, RIO must publish an easily readable and efficiently organized comprehensive annual financial report. The report must also satisfy both generally accepted accounting principles and applicable legal requirements. The 2017 report has been submitted to GFOA for review, and we expect it to meet the requirements for receiving the award again this year.

Also, TFFR has received the Public Pension Coordinating Council (PPCC) 2017 Public Pension Standards Award for Administration (see 2017 CAFR, p. 14). To receive the award, the retirement system must certify that it meets specific standards for a comprehensive benefit program, actuarial valuations, financial reporting, investments, and communications to members. TFFR has received an award for administration and/or funding from PPCC since 1992.

The 2017 TFFR Fast Facts has also been updated, and is also available on the RIO website. This one page summary provides key actuarial, financial, and investment details about the TFFR plan.

Thanks to Connie Flanagan, Shelly Schumacher and other staff for their efforts in ensuring RIO reports and publications are updated, and that RIO receives the GFOA and PPCC awards each year.

Board Information Only. No board action is requested.

ND TFFR Fast Facts

FY End 6/30/2017

The ND Teachers' Fund for Retirement plan (ND TFFR) provides ND educators with a financial foundation for the future that includes a secure and stable retirement. This is possible due to TFFR's plan design, professional plan management, strong investment performance, and outstanding customer service.

MEMBERS

WE SERVE

10,874 ACTIVE MEMBERS

8,501 RETIRED MEMBERS

215 EMPLOYERS

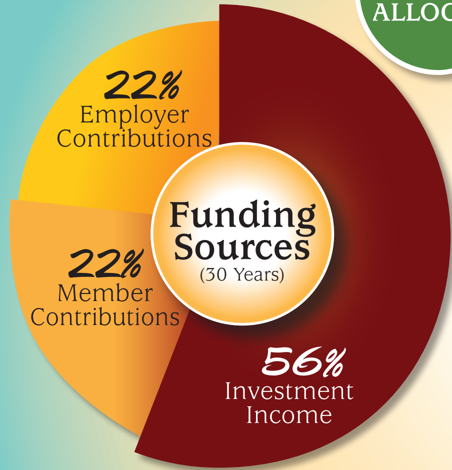
Member Stats	Actives	Retirees
Avg. Annual Salary/Benefit	$59,780	$23,400
Avg. Service Credit	11.9 yrs	27.4 yrs
Avg. Current Age	42.1 yrs	71.7 yrs

MEMBER/EMPLOYER SATISFACTION: 3.8 (4.0 Scale)

84% of benefits are paid to ND residents.

To positively impact the state's economy, **$191 million** was distributed to retirees in FY 2017.

Market value of TFFR assets **$2.4** billion

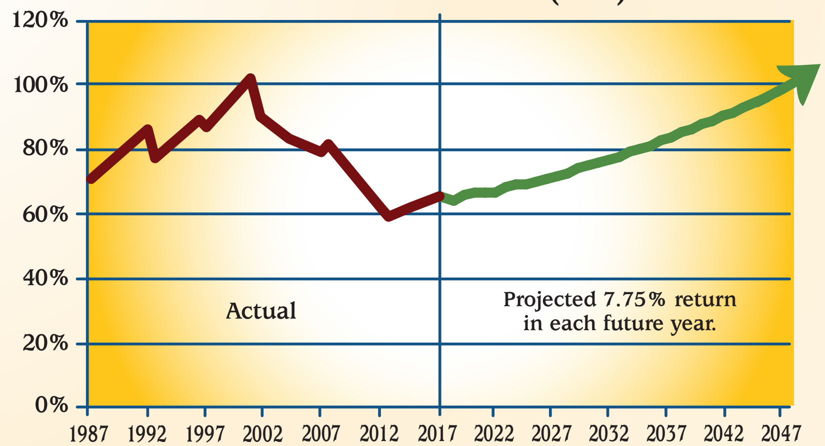


Investment Returns

1 year	12.9%
5 year	9.2%
30 year	7.8%

64% of BENEFITS are PREFUNDED

TFFR Funded Ratio (AVA)



TFFR's long-term funding outlook is positive, and benefits are secure for past, present, and future ND educators.

ND Teachers' Fund for Retirement, 3442 E. Century Avenue, P.O. Box 7100, Bismarck, ND 58507
1-800-952-2970 or 701-328-9885 | Email: rio@nd.gov | Website: www.nd.gov/rio/tffr

ND TFFR PLAN SUMMARY

	Tier 1 Grandfathered Member	Tier 1 Non-Grandfathered Member	Tier 2 Member
Employee Contribution Rates (active and re-employed retirees)			
7/1/10 – 6/30/12	7.75%	7.75%	7.75%
7/1/12 – 6/30/14	9.75%	9.75%	9.75%
*7/1/14 ongoing	11.75%	11.75%	11.75%
Employer Contribution Rates			
7/1/10 – 6/30/12	8.75%	8.75%	8.75%
7/1/12 – 6/30/14	10.75%	10.75%	10.75%
*7/1/14 ongoing	12.75%	12.75%	12.75%
Vesting Period	3 yrs	3 yrs	5 yrs
Unreduced Retirement Eligibility			
Minimum Age	No	60	60
AND Rule	Rule 85	Rule 90	Rule 90
OR Normal Retirement Age	65	65	65
Reduced Retirement Eligibility			
Minimum Age	55	55	55
Reduction Factor	6%	8%	8%
Retirement Formula Multiplier	2%	2%	2%
X Final Average Salary	3 yr FAS	3 yr FAS	5 yr FAS
X Service Credit	Total years	Total years	Total years
Disability Retirement	Yes	Yes	Yes
Retirement Formula Multiplier (2%) X Final Average Salary (FAS) X Total Service Credit			
Death/Survivor Benefits	Yes	Yes	Yes
Refund of account value or Life Annuity to survivor based on member's vesting status.			

Tier 1 is a member who had service credit in the TFFR plan prior to 7/1/08.

- Tier 1 Grandfathered member was less than 10 years away from retirement eligibility as of 6/30/13. Grandfathered member was vested, and either age 55 or had a combined total of service credit and age equal to or greater than 65 on 6/30/13.
- Tier 1 Non-Grandfathered member was more than 10 years away from retirement eligibility as of 6/30/13. Non-grandfathered member was less than age 55 and had a combined total of service credit and age which was less than 65 on 6/30/13.

Tier 2 is a member who began participation in the TFFR plan on 7/1/08 or after.

**Contribution rates are in effect until TFFR reaches 100% funded level, then rates reduce to 7.75% each.*

North Dakota Teachers' Fund For Retirement

NDTFFR Board Reading – January 2018

- National Institute on Retirement Security (NIRS): Win-Win: Pensions Efficiently Serve American Schools and Teachers – October 2017
- Economic Policy Institute: Teachers and Schools are Well Served by Teacher Pensions – October 2017
- National Conference on Public Employee Retirement Systems (NCPERS) Research Series: Don't Dismantle Public Pensions Because They Aren't 100% Funded – November 2017
- National Association of State Retirement Administrators (NASRA) Issue Brief: Cost of Living Adjustments – November 2017
- National Public Pension Coalition: A School's Choice: Retirement Security for Charter School Teachers – October 2017