Agenda

ND Teachers' Fund for Retirement Board Meeting

Thursday, January 22, 2015
1:00 pm

Workforce Safety and Insurance Board Room
1600 East Century Avenue, Bismarck, ND

1. Call to Order and Approval of Agenda - Pres. Gessner (Board Action) 5 min
2. Approval of Minutes October 23, 2014 Meeting – Pres. Gessner (Board Action) 5 min
3. New Trustee Introduction – Pres. Gessner (Information) 5 min
4. Selection of TFFR representative to SIB – Pres. Gessner (Board Action) 5 min
5. 2015 Legislative Update – Fay Kopp (Information) 30 min
6. TFFR Investment Update – Dave Hunter, CIO/ED (Information) 15 min
7. GASB Update – Fay Kopp and Shelly Schumacher (Information) 30 min
8. Actuarial Contract – Fay Kopp (Board Direction) 15 min
9. Annual Retirement Statistics Report – Shelly Schumacher (Board Action) 20 min
10. Annual Retirement Trends Report – Shelly Schumacher (Board Action) 20 min
11. 2014 CAFR and PPCC Award – Fay Kopp (Information) 5 min
12. Retirement job vacancy update – Fay Kopp (Information) 5 min
13. 2015-16 Board meeting schedule – Fay Kopp (Board Action) 5 min
14. Trustee Education – Fay Kopp (Information) 10 min
15. Consent Agenda – (Board Action) 5 min
    Disability applications
    *Executive Session possible if Board discusses confidential information under NDCC 15-39.1-30.
16. Other Business
    Next Board Meeting: February 26, 2014 - WSI Board Room
17. Adjournment

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 23, 2014, BOARD MEETING

BOARD MEMBERS PRESENT: Mike Gessner, President
Clarence Corneil, Vice Chair
Kirsten Baesler, State Superintendent
Kim Franz, Trustee
Rob Lech, Trustee
Mel Olson, Trustee
Kelly Schmidt, State Treasurer

STAFF PRESENT: Terra Miller Bowley, Audit Services Supervisor
Paula Brown, Retirement Program Specialist
David Hunter, ED/CIO
Fay Kopp, Deputy ED/CRO
Shelly Schumacher, Retirement Program Manager
Dottie Thorsen, RIO Auditor
Denise Weeks, Retirement Program Specialist

OTHERS PRESENT: Aimee Copas, NDCEL
Janilyn Murtha, Attorney General's Office
Kim Nicholl, Segal Consulting

CALL TO ORDER:

Mr. Mike Gessner, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the board meeting to order at 1:00 p.m. on Thursday, October 23, 2014, at the State Capitol, Peace Garden Room, Bismarck, ND.

THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM: SUPT. BAESLER, MR. CORNEIL, MRS. FRANZ, MR. GESSNER, MR. LECH, MR. OLSON AND TREASURER SCHMIDT.

APPROVAL OF AGENDA:

The Board considered the meeting agenda.

MRS. FRANZ MOVED AND MR. CORNEIL SECONDED TO APPROVE THE AGENDA AS PRESENTED.

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

MINUTES:

The board considered the minutes of the TFFR board meeting held September 25, 2014.

MR. OLSON MOVED AND MR. CORNEIL SECONDED TO APPROVE THE MINUTES OF THE TFFR BOARD MEETING HELD SEPTEMBER 25, 2014.

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

2014 VALUATION REPORT AND FUNDING PROJECTIONS:

Ms. Kim Nicholl, Senior Vice President, Segal Consulting, presented TFFR's Actuarial Valuation as of July 1, 2014. Copies of the report and presentation are on file at the Retirement and Investment Office (RIO).

The primary purposes of the actuarial valuation are to report the Fund's actuarial assets, calculate the Fund's liabilities, determine the funding policy actuarially determined contribution (ADC) for fiscal year (FY) 2015, provide information for annual financial statements, and identify emerging trends. Ms. Nicholl provided an overview of the valuation process; reviewed actuarial assumptions and methods; and presented the 2014 valuation highlights.

The 2014 valuation reflects increases in member and employer contribution rates (11.75% member and 12.75% employer effective July 1, 2014). The market value of assets (MVA) returned 16.1% for year ending June 30, 2014 (Segal calculation). MVA increased from $1.839 billion on June 30, 2013, to $2.091 billion on June 30, 2014. TFFR's actuarial accrued liability (AAL) increased from $2.997 billion, to $3.139 billion. The unfunded actuarial accrued liability (UAAL) decreased from $1.235 billion to $1.198 billion. The funded ratio increased from 59% to 62% on the actuarial value of assets (AVA). On a MVA basis, the funded ratio increased from 61% to 67%. The effective amortization period decreased from 28 years to 24 years during the same time period. The ADC increased from 10.26% of payroll to 11.57% of payroll. Based on the employer contribution rate of 12.75%, the contribution sufficiency (margin) has increased to 1.18% of payroll.

Ms. Nicholl also presented estimated funded ratio projections for 30 years based on FY15 investment return scenarios ranging from -24% to +24% and assuming 8% earnings each year thereafter. This includes contribution rates of 11.75% for members and 12.75% for employers until the funded ratio reaches 100% when contribution rates will sunset back to 7.75% each. TFFR funding levels are expected to improve in the future, and are projected to reach 80-100% in 20-30 years, depending upon investment performance.

After board discussion and questions,

MR.LECH MOVED AND SUPT. BAESLER SECONDED TO ACCEPT THE 2014 ACTUARIAL VALUATION REPORT.

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

GASB INFORMATION:

Ms. Nicholl gave an overview of the new Governmental Accounting Standards Board (GASB) 67 and 68 requirements. GASB 67, which replaces GASB 25, is effective June 30, 2014, for the TFFR plan. GASB 68, which replaces GASB 27, is effective June 30, 2015, for TFFR participating employers. The new standards require that a proportionate share of TFFR's net pension liability (NPL) is required to be reported on the employer's balance sheet and in the plan's notes to the financial statements. Accounting and financial reporting are divorced from contribution requirements. The annual pension expense for employers is essentially equal to the change in NPL during the year, with deferrals of certain items.

As of June 30, 2014, TFFR's Total Pension Liability (TPL) was $3.139 billion, Net Plan Position (or market value of assets) was $2.09 billion, and Net Pension Liability (NPL) was $1.048 billion. The plan's fiduciary net position as a percentage of the total pension liability is 67%. Samples were given of the proportionate share of the NPL for five of the largest schools, two midrange schools, and three of the very small school districts.

Board discussion and questions followed.

EXPERIENCE STUDY PLANNING:

Ms. Nicholl presented information on the Experience Study that Segal Company is conducting for TFFR early in 2015. Actuarial experience studies are conducted every five years for TFFR and serve as the basis for recommended changes in actuarial assumptions and methods. The study will cover the period from 2009-2014 and will compare actual changes in liabilities with expected changes in liabilities. Ms. Nicholl reviewed the various current economic and demographic assumptions. The Board discussed the current investment return assumption (8%). They also discussed the growth in ND residents and school-aged children which is leading to additional schools and teachers, and how it impacts the payroll growth assumption.

Board discussion followed.

BOARD EDUCATION: DEFINED CONTRIBUTION AND HYBRID PLANS:

Ms. Nicholl provided an overview of various types of retirement plans including defined benefit (DB), defined contribution (DC), and hybrid plans. Under a DB plan, the benefit is defined and the contribution is not. Under a DC plan, the contribution is defined, but the benefit is not. A hybrid plan is some combination of the features of a DB plan and

a DC plan. DB plans focus on benefit security; DC plans focus on wealth accumulation. Different levels of risk are involved with each plan.

Board discussion and questions followed. All presentations are on file at RIO.

The board recessed at 3:25 p.m. and reconvened at 3:40 p.m.

LEGISLATIVE UPDATE:

Mrs. Kopp, Deputy Executive Director/Chief Retirement Officer, reported on the Legislative Employee Benefits Programs Committee (LEBPC) meeting held on September 18, 2014. Mrs. Kopp presented testimony on Bill No. 140 which includes Internal Revenue Code (IRC) updates, and also submitted the proposed amendment approved by the TFFR board. The amended bill has been sent to Segal for final review. Mr. Matthew Strom, Segal, will give TFFR's 2014 actuarial valuation report at the next LEBPC meeting to be held October 29, 2014. The Committee will be making their recommendation on the bill at that meeting. The deadline to prefile a bill for the 2015 session is December 6, 2014.

TREASURER SCHMIDT MOVED AND MR. OLSON SECONDED TO DIRECT MRS. KOPP TO PREFILE BILL NO. 140 FOR THE 2015 LEGISLATIVE SESSION AFTER THE LEBPC HAS MADE THEIR RECOMMENDATION.

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

The Legislative Government Finance Committee (LGFC) met on October 8, 2014. The Committee discussed and approved submitting various amended bills to the Legislative Management Committee for consideration. Bill No. 176 would close the Public Employees Retirement System (PERS) defined benefit plan on January 1, 2016, and require all new state employees to participate in the PERS defined contribution plan. Concurrent Resolution 3010 and Bill No. 189 were also reviewed. They would establish a new Public Employee Retirement Stabilization Fund and transfer certain funds from the Foundation Aid Stabilization Fund for the purposes of addressing existing and/or anticipated unfunded benefit obligations of state retirement funds, low interest school construction loans, or other education-related purposes.

Mrs. Kopp reviewed the handout, "NDTFFR 2014 Funding Update".

Board discussion followed.

NDSBA PROPOSED RESOLUTION:

Mrs. Kopp reviewed a resolution regarding TFFR contributions and funding that has been approved by the North Dakota School Board Association (NDSBA) Board of Directors and will be presented for

Delegate Assembly approval at the annual convention October 24, 2014. Mr. Lech reported on an amendment to the proposed resolution approved by the Jamestown School Board that will also be presented at the convention. Board discussion followed.

Mrs. Kopp will be presenting a TFFR funding update at the convention.

GASB PLANNING UPDATE:

Mrs. Shelly Schumacher, Retirement Program Manager, reported on the progress being made in development of plans for implementation of the new GASB pension reporting standards. TFFR is working closely with plan auditors, CliftonLarsonAllen, and plan actuary, Segal, on implementation details. Full training for all employers of TFFR and PERS, along with their auditors, and the state auditor's office will be held December 11, 2014, from 8:30 a.m. to noon, at the Bismarck Events Center. A video of the training will be available on the RIO website. Board discussion followed.

ANNUAL TFFR PROGRAM AUDIT REPORT:

Mrs. Kopp introduced Ms. Terra Miller-Bowley, Audit Services Supervisor, who recently began work at RIO. Mrs. Dottie Thorsen, RIO auditor, presented the annual TFFR program audit activities report for the year ended June 30, 2014. Mrs. Thorsen reported 22 school district compliance audits were completed this year. Twenty-one were in compliance and one generally in compliance. Three not in compliance reviews from past years were also completed.

Other audits conducted during the year included a TFFR file maintenance audit and a benefits payment audit.

The annual financial audit of RIO for the year ended June 30, 2014, was conducted by independent auditors from the accounting firm CliftonLarsonAllen. The report will be presented at the SIB Audit Committee meeting to be held November 20, 2014.

A copy of Mrs. Thorsen's report is on file at RIO. After discussion,

MR. OLSON MOVED AND MR. LECH SECONDED TO ACCEPT THE ANNUAL TFFR PROGRAM AUDIT REPORT.

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

TRUSTEE EDUCATION/NCTR CONFERENCE:

Mrs. Franz and Mr. Olson provided a brief report on the education they received at the National Council on Teacher Retirement (NCTR) conference, which they attended.

CONSENT AGENDA:

TREASURER SCHMIDT MOVED AND MS. FRANZ SECONDED TO APPROVE THE CONSENT AGENDA WHICH INCLUDES ONE DISABILITY APPLICATION – 2014-4D.

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

OTHER BUSINESS:

The next board meeting will be held January 22, 2015.

ADJOURNMENT:

With no further business to come before the Board, President Gessner adjourned the meeting at 5:10 p.m.

Respectfully Submitted:

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

_____
Darlene Roppel
Reporting Secretary

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **Trustee Appointment**

Governor Dalrymple has appointed Mike Burton to complete the unexpired term of Clarence Corneil on the TFFR Board of Trustees through June 30, 2017. Mike retired from Fargo Public Schools in 2012 with over 40 years of teaching service, and represents retired members of the fund.

Mike will be at the RIO office the morning of January 22 for his first staff orientation on TFFR, and plans to attend the TFFR board meeting that afternoon.

Please join me in welcoming Mike to the TFFR Board.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **Selection of TFFR Representative to SIB**

As you know, three members of the TFFR Board serve on the State Investment Board. For the July 1, 2014 – June 30, 2015 fiscal year, TFFR representatives are as follows:

- Mike Gessner, active teacher
- Rob Lech, active administrator
- Vacant, retired member (formerly Clarence Corneil)

Note: Treasurer Schmidt also serves on the SIB by virtue of her position as State Treasurer, not as a TFFR representative.

Mel Olson is currently the TFFR alternate to the SIB and will attend meetings as an alternate until a selection is made. It would be appropriate for the TFFR Board to do so at the January meeting, if possible.

TFFR Legislative Update
January 16, 2015

BILL NO.	DESCRIPTION	SPONSOR	POSITION
HB 1064	**TFFR Technical Corrections**	**TFFR Board**	**Support**

HB 1064 includes technical corrections required by federal tax law for TFFR to maintain its qualified tax status. The bill removes IRC date references and adds "as amended" language to indicate future IRC changes are intended to be incorporated. The proposed changes have no financial impact on the Fund.

The bill was assigned to the House GVA Committee. Committee hearing was held on 1.8.15. Fay provided testimony. The Committee had questions regarding IRS requirements, Segal actuarial review, and Ice Miller legal analysis. Additional information from TFFR's legal counsel at the AGO, and outside tax counsel from Ice Miller was provided to the Committee with respect to the legality of adopting future amendments to the IRC "as amended," the process of incorporating the IRS tax code references to reflect when each of the provisions were amended under federal law, and the potential implications of the Windsor court decision on current TFFR statutes.

SB 2022	**RIO Budget**	**Governor/Approp**	**Support**

SB 2022 includes the budget authority and continuing appropriations for the Retirement and Investment Office (RIO) administrative expenses for operating the retirement program for the TFFR Board and the investment program for the SIB. (Note: SB 2022 also contains the budget for PERS.)

The bill was assigned to the Senate Appropriations Committee. Committee hearing was held on 1.14.15. Dave provided testimony on the RIO budget bill which was well received. There were questions relating to SIB and TFFR board make up, SIB investment clients, managers, expenses, and performance. Additional information has been forwarded to the Committee. The Committee also questioned TFFR funding projections and contribution rate increases which Fay addressed.

OTHER BILLS OF INTEREST TO TFFR:

HB 1080 PERS Funding - Contribution Increases PERS Board Monitor

HB 1080 is the PERS funding improvement bill which includes 1% member and 1% employer contribution increase effective 1.1.16.

The bill was assigned to the House GVA Committee. A hearing has been scheduled for Thursday, January 22 at 8 am.

HB 1329 SIB Membership Rep Kreidt, et al Monitor

HB 1329 adds two board members to the SIB – one member appointed by the Senate majority leader and one member appointed by the House majority leader.

The bill was assigned to the House Political Subdivisions Committee. A hearing has not yet been scheduled.

HB 1339 Income Tax Exclusion for Govt Pensions Rep Owens, et al Monitor

HB 1339 provides a state income tax exclusion for municipal, state, and federal pension payments and social security benefits.

The bill was assigned to the House Finance and Taxation Committee. A hearing has not yet been scheduled.

SB 2013 DPI Budget Governor/Approp Monitor

SB 2013 is DPI's appropriations bill.

The bill was assigned to Senate Education Committee. Committee meetings are ongoing.

SB 2031 School District Foundation Aid Leg Mgmt/Educ Com Monitor

SB 2031 is the foundation aid bill for school districts. Section 1 of the bill relates to the ability of school districts to use the proceeds of levies to meet TFFR obligations. It does not appear to have any direct impact on TFFR, and is intended to clean up language as part of the major overhaul of the K-12 education funding formula passed last session.

The bill was assigned to the Senate Education Committee. A hearing has been scheduled for Tuesday, January 20 at 10 am.

SB 2038 PERS DC Plan for New State Employees Leg Mgmt/Gov Fin Monitor

SB 2038 closes the PERS Defined Benefit plan to existing state employees, and requires new state employees to participate in the PERS Defined Contribution plan effective 1.1.16.

The bill was assigned to Senate GVA Committee. A hearing has been scheduled for Thursday, January 22 at 9 am.

SB 2039 Public Employee Retirement Stabil Fund Leg Mgmt/Gov Fin Monitor

SB 2039 creates a new Public Employee Retirement Stabilization Fund and School Construction Assistance Loan Fund. It also transfers certain funds from the Foundation Aid Stabilization Fund to these two new trust funds for the purpose of addressing existing and/or anticipated unfunded benefit obligations of state retirement funds and low interest school construction loans. The bill is contingent upon passage of SCR 4003, and approval of the resolution in June 2016 by voters of the state.

The bill was assigned to the Senate Education Committee. Hearing was held on 1.12.15.

SCR 4003 Foundation Aid Stabil Fund – Const Amend Leg Mgmt/Gov Fin Monitor

SCR 4003 amends the ND Constitution relating to the Foundation Aid Stabilization Fund, and must be voted on in the June 2016 primary election. The resolution provides that whenever the principal balance of the foundation aid stabilization fund reaches a certain balance, the legislative assembly may appropriate or transfer any excess principal balance for the purpose of making low-interest loans for school construction projects, addressing existing or anticipated unfunded benefit obligations of state retirement funds, or other education-related purposes. This resolution relates to SB 2039.

The resolution was assigned to the Senate Education Committee. Hearing was held on 1.12.15. NDUnited, NDSBA, OMB, and the Chamber of Commerce opposed the resolution either because of the provision about pensions, the language regarding other education priorities, or because there is already a fund that provides school districts with low-interest construction loans.

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TFFR Legislation: http://www.nd.gov/rio/TFFR/Legislation/default_2015.htm
ND Legislative website: http://www.legis.nd.gov/assembly/64-2015/regular

HB 1064

House Government and Veterans Affairs Committee
January 8, 2015

Fay Kopp, Chief Retirement Officer – ND Teachers' Fund for Retirement
Deputy Executive Director - ND Retirement and Investment Office

HB 1064 was submitted by the TFFR Board. The bill includes technical corrections which are required by federal tax law in order for TFFR to maintain its status as a qualified governmental plan. The bill does not make plan design changes, and was not submitted for funding improvement purposes.

In general, the bill removes all Internal Revenue Code (IRC) date references and adds "as amended" language to clearly indicate that future IRC changes are intended to be incorporated. According to TFFR's legal counsel from the Attorney General's Office and Legislative Council staff, Article X, Section 3, of the ND Constitution allows adoption by reference of federal income tax laws as amended in the future.

Section 1. NDCC 15-39.1-04 (10) Definitions: Eligible Retirement Salary

Provision relates to the maximum annual compensation limit that can be used in benefit calculations ($265,000 in 2015). No active TFFR member currently has a salary large enough to be affected by this limit.

Section 2. NDCC 15-39.1-10(4) Eligibility for benefits

Provision relates to minimum distribution requirements requiring payment of retirement benefits at age 70.5 or termination of employment, whichever is later.

Section 3. NDCC 15-39.1-10.6 Benefit limitations

Provision relates to the Section 415 maximum annual benefit limit ($210,000 in 2015). To date, no retiree's benefit has exceeded the annual benefit limit.

Section 4. NDCC 15-39.1-20 Withdrawal from Fund

Provision provides that a member or a member's beneficiary may elect to have an eligible rollover distribution paid to an eligible retirement plan as allowed under IRC regulations.

Sections 5 and 6. NDCC 15-39.1-24 (8) and (11) Purchase of additional credit

Provision provides for purchase of up to 5 years of nonqualified service credit and acceptance of eligible rollover distributions and transfers from eligible retirement plans as allowed under IRC regulations.

Section 7. NDCC 15-39.1-34 Internal Revenue Code compliance

Provision requires the board to administer the TFFR plan in compliance with various sections of the IRC and regulations as they apply to governmental plans.

Actuarial Consultant and Outside Tax Counsel Review

TFFR's actuarial consultant, Segal Company, has reviewed the bill. In their letter dated October 28, 2014, they noted the bill would not have a material actuarial cost impact on TFFR. They also stated the provisions of the bill do not appear to directly or significantly impact the benefits payable from TFFR.

Additionally, outside tax counsel (Ice Miller) was hired by TFFR to review plan statutes to determine whether any changes were necessary to comply with the U.S. Supreme Court ruling in *United States v. Windsor* relating to same-gender marriages and the definition of spouse for purposes of federal tax laws. Outside tax counsel advised TFFR that revising the IRC references to automatically update as the Code sections are amended was sufficient.

Summary

The Legislative Employee Benefits Programs Committee reviewed this bill (Bill Draft No. 140), and unanimously gave a favorable recommendation.

On behalf of the TFFR Board, we respectfully request that your Committee give a "do pass" recommendation on HB1064.

Thank you.

Sixty-fourth
Legislative Assembly
of North Dakota

HOUSE BILL NO. 1064

Introduced by

Government and Veterans Affairs Committee

(At the request of the Teachers' Fund for Retirement)

A BILL for an Act to amend and reenact subsection 10 of section 15-39.1-04, subsection 4 of section 15-39.1-10, sections 15-39.1-10.6 and 15-39.1-20, subsections 8 and 11 of section 15-39.1-24, and section 15-39.1-34 of the North Dakota Century Code, relating to the incorporation of federal law changes for the definition of salary, eligibility for normal retirement benefits, benefit limitations, and withdrawal from the fund under the teachers' fund for retirement.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. AMENDMENT. Subsection 10 of section 15-39.1-04 of the North Dakota Century Code is amended and reenacted as follows:

10. "Salary" means a member's earnings in eligible employment under this chapter for teaching, supervisory, administrative, and extracurricular services during a plan year reported as salary on the member's federal income tax withholding statements plus any salary reduction or salary deferral amounts under 26 U.S.C. 125, 132(f), 401(k), 403(b), 414(h), or 457 ~~in effect on August 1, 2013~~, as amended. "Salary" includes amounts paid to members for performance of duties, unless amounts are conditioned on or made in anticipation of an individual member's retirement or termination. The annual salary of each member taken into account in determining benefit accruals and contributions may not exceed the annual compensation limits established under 26 U.S.C. 401(a)(17)(B) ~~in effect on August 1, 2013~~, as amended, as adjusted for increases in the cost of living in accordance with 26 U.S.C. 401(a)(17)(B) ~~in effect on August 1, 2013~~, as amended. A salary maximum is not applicable to members whose participation began before July 1, 1996. "Salary" does not include:

    a. Fringe benefits or side, nonwage, benefits that accompany or are in addition to a member's employment, including insurance programs, annuities, transportation

allowances, housing allowances, meals, lodging, or expense allowances, or other benefits provided by a member's employer.

b. Insurance programs, including medical, dental, vision, disability, life, long-term care, workforce safety and insurance, or other insurance premiums or benefits.

c. Payments for unused sick leave, personal leave, vacation leave, or other unused leave.

d. Early retirement incentive pay, severance pay, or other payments conditioned on or made in anticipation of retirement or termination.

e. Teacher's aide pay, referee pay, busdriver pay, or janitorial pay.

f. Amounts received by a member in lieu of previously employer-provided benefits or payments that are made on an individual selection basis.

g. Signing bonuses as defined under section 15.1-09-33.1.

h. Other benefits or payments not defined in this section which the board determines to be ineligible teachers' fund for retirement salary.

SECTION 2. AMENDMENT. Subsection 4 of section 15-39.1-10 of the North Dakota Century Code is amended and reenacted as follows:

4. Retirement benefits must begin no later than April first of the calendar year following the year the member attains age seventy and one-half or April first of the calendar year following the year the member terminates covered employment, whichever is later. Payments must be made over a period of time which does not exceed the life expectancy of the member or the joint life expectancy of the member and the beneficiary. Payment of minimum distributions must be made in accordance with section 401(a)(9) of the Internal Revenue Code ~~in effect on August 1, 2013~~, as amended, and the regulations issued under that section, as applicable to governmental plans.

SECTION 3. AMENDMENT. Section 15-39.1-10.6 of the North Dakota Century Code is amended and reenacted as follows:

15-39.1-10.6. Benefit limitations.

Benefits with respect to a member participating under former chapter 15-39 or chapter 15-39.1 or 15-39.2 may not exceed the maximum benefits specified under section 415 of the Internal Revenue Code [26 U.S.C. 415] ~~in effect on August 1, 2013~~, as amended, for

governmental plans. The maximum dollar benefit applicable under section 415(b)(1)(A) of the Internal Revenue Code must reflect any increases in this amount provided under section 415(d) of the Internal Revenue Code ~~subsequent to August 1, 2013~~, as amended. If a member's benefit is limited by these provisions at the time of retirement or termination of employment, or in any subsequent year, the benefit paid in any following calendar year may be increased to reflect all cumulative increases in the maximum dollar limit provided under section 415(d) of the Internal Revenue Code for years after the year employment terminated or payments commenced, but not to more than would have been payable in the absence of the limits under section 415 of the Internal Revenue Code. If an annuitant's benefit is increased by a plan amendment, after the commencement of payments, the member's benefit may not exceed the maximum dollar benefit under section 415(b)(1)(A) of the Internal Revenue Code, adjusted for the commencement age and form of payment, increased as provided by section 415(d) of the Internal Revenue Code. If this plan must be aggregated with another plan to determine the effect of section 415 of the Internal Revenue Code on a member's benefit, and if the benefit must be reduced to comply with section 415 of the Internal Revenue Code, then the reduction must be made pro rata between the two plans, in proportion to the member's service in each plan.

SECTION 4. AMENDMENT. Section 15-39.1-20 of the North Dakota Century Code is amended and reenacted as follows:

15-39.1-20. Withdrawal from fund.

When a member of the fund ceases to be eligible under the terms of this chapter to participate in the fund, the member may, after a period of one hundred twenty days, withdraw from the fund and is then entitled to receive a refund of assessments accumulated with interest. The one-hundred-twenty-day requirement may be waived by the board when it has evidence the teacher will not be returning to teach in North Dakota. The refund is in lieu of any other benefits to which the member may be entitled under the terms of this chapter, and by accepting the refund, the member is waiving any right to participate in the fund under the same provisions that existed at the time the refund was accepted regardless of whether the member later repurchases refunded service credit. A member or a beneficiary of a member may elect, at the time and under rules adopted by the board, to have any portion of an eligible rollover distribution paid directly in a direct rollover to an eligible retirement plan specified by the

member or the beneficiary to the extent permitted by section 401(a)(31) of the Internal Revenue Code ~~in effect on August 1, 2011~~, as amended.

SECTION 5. AMENDMENT. Subsection 8 of section 15-39.1-24 of the North Dakota Century Code is amended and reenacted as follows:

8. A teacher who has at least five years of teaching service credit in the fund may purchase credit not based on service for use toward retirement eligibility and benefits. The purchase of service credit for such nonqualified service as defined under section 415(n) of the Internal Revenue Code, as amended, is limited to an aggregate of five years.

SECTION 6. AMENDMENT. Subsection 11 of section 15-39.1-24 of the North Dakota Century Code is amended and reenacted as follows:

11. The fund may accept eligible rollovers, direct rollovers, and trustee-to-trustee transfers from eligible retirement plans specified under Internal Revenue Code section 402(c)(8)(B), as amended, to purchase refunded service credit under section 15-39.1-15 and to purchase additional service credit under section 15-39.1-24. The board shall adopt rules to ensure that the rollovers and transfers comply with the requirements of the Internal Revenue Code and internal revenue service regulations. The total amount rolled over or transferred into the fund may not exceed the amount due to purchase service credit.

SECTION 7. AMENDMENT. Section 15-39.1-34 of the North Dakota Century Code is amended and reenacted as follows:

15-39.1-34. Internal Revenue Code compliance.

The board shall administer the plan in compliance with section 415, section 401(a)(9), section 401(a)(17), and section 401(a)(31) of the Internal Revenue Code, as amended, and regulations adopted pursuant to those provisions as they apply to governmental plans.

Segal Consulting

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October 28, 2014

Senator Dick Dever, Chairman
Employee Benefits Program Committee
c/o Jennifer Clark
North Dakota Legislative Council
State Capitol
600 East Boulevard
Bismarck, ND 58505

Re: **Technical Comments on Draft Bill No. 15.0140.02000**

Dear Senator Dever:

As requested, we reviewed draft Bill No. 15.0140.02000, which proposes technical and administrative changes to the North Dakota Teachers' Fund for Retirement (TFFR). The following presents our analysis of such proposed changes found in the draft bill.

Summary: The proposed legislation automatically updates federal compliance provisions of the plan regarding Internal Revenue Code sections 401(a)(17), 401(a)(9), 401(a)(31), 402(c) and 415(b), (d) and (n), as such sections are amended, in various sections of the North Dakota Century Code (NDCC), chapter 15-39.1 (Sections 1, 2, 3 and 4). In addition, the proposed legislation automatically updates Internal Revenue Code sections relating to salary reduction or salary deferral amounts, including sections 125, 132(f), 401(k), 403(b), 414(h) and 457, as such sections are amended.

Actuarial Cost Analysis: This bill would have an immaterial actuarial cost impact on the TFFR.

Technical Comments: Our comments on the bill are as follows:

General Comments

The bill makes various provisions of the plan consistent with current federal income tax laws. The provisions of this bill do not appear to directly or significantly impact the benefits payable from the TFFR.

Compliance Issues

The bill amends various sections of the North Dakota Century Code, chapter 15-39.1 to change references under Internal Revenue Code section 401(a)(9), section 401(a)(17) (as well as Code references related to the definition of compensation under section 401(a)(17)), section 401(a)(31), section 402(c) and section 415(b), (d) and (n) from the Code language in effect on August 1, 2013 to instead be automatically updated as those Code sections are amended. No material changes have been made to these Internal Revenue Code sections since August 1, 2013, other than the statutory indexing of dollar amounts set forth in Code sections 401(a)(17) and 415(b).

It is our understanding that external legal counsel reviewed your statutes to determine whether any changes were necessary to comply with the Supreme Court ruling in *United States v. Windsor* relating to same-gender marriage and the definition of spouse for purposes of federal tax laws, and advised that revising the Internal Revenue Code references to be automatically updated as the Code sections are amended was sufficient for this purpose. Pursuant to IRS Notice 2014-19, any plan amendment necessary to comply with the *Windsor* decision must be effective June 26, 2013 (unless an earlier effective date is selected), and governmental plans must be amended no later than the close of the first legislative session of the legislative body with the authority to amend the plan that ends after December 31, 2014. The IRS Notice suggests that, even if a plan amendment is not required, a clarifying amendment may help ensure proper plan operations in the future.

The information contained in this letter is provided within our role as the plan's actuary and benefits consultant and is not intended to provide tax or legal advice. We recommend that you address all issues described herein with your legal counsel.

Please contact us if you have any questions or comments.

Sincerely yours,

Kim Nicholl

Melanie Walker

Kim M. Nicholl, FSA, EA, FCA
Senior Vice President & Actuary

Melanie Walker, JD
Vice President

cc: Fay Kopp
Matthew Strom

5442418V4/13475.003

Roppel, Darlene A.

From: Kopp, Fay L.
Sent: Wednesday, January 14, 2015 3:35 PM
To: Kasper, Jim M.; Koppelman, Ben
Cc: NDLA, H GVA - Hart, Carmen; Roppel, Darlene A.; Schumacher, Shelly A.; Hunter, David J.
Subject: TFFR - HB 1064

J. Murtha 1-13-15 Email.pdf

Ice Miller 1-14-15 Memo.pdf

Ice Miller 8-18-14 Memo.pdf

AG opinion 2013-L-06.pdf

Chairman Kasper and Rep. Koppelman,

In response to your questions presented to me on January 9, here is information from TFFR's legal counsel at the Attorney General's Office, as well as outside tax counsel hired by TFFR to review TFFR statutes for IRS compliance related issues. I attempted to categorize your questions into three areas. Hopefully this will give you the information you are looking for, but if further clarification is needed, please let me know.

1) You questioned whether the Legislature could adopt future amendments to the Internal Revenue Code (IRS) by reference, as presented in HB 1064. According to TFFR's legal counsel, this is permissible (see Jan Murtha 1/13/15 email attached). Although ND courts have generally found that a statute attempting to incorporate future changes of another statute, code, regulation, standard, or guideline is unconstitutional, there is an exception to this prohibition which permits the Legislature to adopt future amendments to federal income tax laws by reference. We believe the federal code references in HB 1064 qualify for the exception because they are federal income tax laws implemented by TFFR in its administration of the plan.

2) You also asked about the process of actually incorporating the IRS tax code references to reflect when each of the provisions in HB 1064 were amended under federal law instead of using the phrase "as amended " in HB 1064. According to outside tax counsel (see Ice Miller 1/14/15 memo attached), in order to alleviate the state legislature from having to continuously update federal statute references, many states use one of several different approaches, instead of placing a specific date in the statutory language with respect to federal tax law compliance. This is subject to specific state drafting protocols and statutory interpretations.

   Examples of alternative approaches used by other states include using "as amended" language which is found in HB 1064 (option 1), or "as adjusted from time to time" language (option 2), or placing a history of the dates of all changes (option 3) in the statutory language with respect to federal tax compliance law. Either the "as amended" or "as adjusted from time to time" are more commonly used instead of providing the history of each IRS code change. According to tax counsel, over the last decade, the frequency of IRS changes have made tracking those changes in a statute increasingly burdensome, complex, and time consuming, therefore option 3 is not often used.

   The first example Ice Miller provided on page 3 of their memo (HB 1064 - Section 1 annual maximum salary) is a reference to an IRS salary limit that is indexed. In the last 10 years, the limit has been adjusted by the IRS eight times. The state could either use "as amended" or "as adjusted from time to time" language or do eight annual amendments. It would appear that to the extent the tax provisions are adjusted on an annual basis, TFFR would have to go back to the Legislative Employee Benefits Programs Committee every interim session and ask for an update to statutes based on the savings clause in NDCC 15-39.1-35. In the example, they went back to 2002, however, the language would need to go back to 1993 in this case.

The second example Ice Miller provided on pages 4-6 of their memo (HB 1064-Section 4) relates to rolling over lump sum TFFR distributions to another eligible retirement plan as defined by the federal tax law. The state could either use "as amended" or "as adjusted from time to time" language or create a history of the dates of all of the related changes in federal tax law. This would require adding a significant amount of language to state law because of numerous federal law changes. In this example, it adds about 2 pages to Section 4 alone, and could actually be more pages if TFFR is required to incorporate dates further back in time. This would need to be reviewed by tax counsel for all federal statutes listed in HB 1064.

The TFFR plan must be in compliance with applicable federal tax law, some of which is updated annually, to maintain its tax qualified status. The TFFR Board chose to include in HB 1064 the "as amended" language because ND does not have annual legislative sessions, it would alleviate the Legislature from having to continuously update federal income tax statute references every session, and it would reduce the time, cost, and administrative burden of having outside tax counsel review and assist TFFR in amending statutes every year.

3) Finally, you asked about the implications of the U.S. vs. Windsor court decision on current TFFR statutes (see Ice Miller 8/18/14 memo attached). Because the ND Constitution and statutes prohibit the recognition of same-sex marriage, an individual's same-sex marriage performed in another state that allows same-sex marriages, is not legally recognized in North Dakota (see AG opinion 2013-L-06 attached).

   In the Windsor decision, the U.S. Supreme Court ruled that for purposes of federal tax laws, the term "spouse" includes both same-sex and opposite-sex spouses. The primary effect of this decision and the subsequent issued IRS guidance for TFFR to maintain its status as a qualified plan is that for federal tax compliance purposes, the plan must apply the federal definition of spouse when administering rollovers of death benefits, benefit limitations, and required minimum distributions under federal tax law, although for state benefit design purposes, North Dakota may continue to distinguish same-sex spouses from opposite-sex spouses.

   For example, under TFFR statutes, a beneficiary may be named for the purpose of directing payment of a claim due to a member's death. If a teacher is married to a same-sex spouse in another state, the marriage is not recognized in ND, so the same-sex spouse is not required by ND statute to be designated beneficiary on the teacher's TFFR account. The teacher is considered not married by ND law, and so the teacher can name anyone as beneficiary - any person (parent, sibling, child, friend, partner, etc.), organization, or estate.

   If the teacher names a person as beneficiary, and the teacher passes away, the beneficiary may elect to receive a monthly benefit for life or take a lump sum of the teacher's member contributions plus interest. If the beneficiary is not a spouse recognized under federal law for tax purposes, the beneficiary can roll over the lump sum to only an inherited IRA. However if the beneficiary is a spouse recognized under federal law for tax purposes (same-sex or opposite-sex spouse), the spouse has the right to roll over the lump sum to their own IRA. The main difference is that for federal tax purposes, both an opposite-sex spouse and a same-sex spouse may use their own IRA instead of an inherited IRA if they elect to take a lump sum distribution in this example.

Please contact me if you would like to discuss this further. Thank you.

Fay Kopp | NDRIO Deputy Executive Director | NDTFFR Chief Retirement Officer
ND Retirement & Investment Office | ND Teachers' Fund for Retirement
PO Box 7100 | Bismarck ND 58507-7100 | Phone 701.328.9895 or 800.952.2970 | fax 701.328.9897
www.nd.gov/rio | mailto:fkopp@nd.gov

From: Murtha, Janilyn K.
Sent: Tuesday, January 13, 2015 2:33 PM
To: Kopp, Fay L.
Subject: 1064 amendment question

Fay,

Please accept this email in response to your question of whether the Legislature could adopt future amendments to the internal revenue code, by reference, as presented in H.B. 1064. As noted in the attached Attorney General Opinion N.D.A.G. 2004-L-66, "(n)umerous courts, including the North Dakota Supreme Court, have held that a statute attempting to incorporate future changes of another statute, code, regulation, standard, or guideline is an unconstitutional delegation of legislative power to the entity publishing the referenced item." There is, however, an exception to this prohibition found under N.D. Const. art. X, § 3 which permits the Legislature to adopt future amendments to federal income tax laws by reference. (See N.D. Const. art. X, § 3; N.D.A.G. 2004-L-66, footnote 3; and 2015 North Dakota Legislative Drafting Manual, p. 92).

H.B. 1064 seeks to adopt future amendments to the internal revenue code provisions referenced in North Dakota Century Code Ch. 15-39.1, relating to the Teachers' Fund for Retirement (hereinafter TFFR), by replacing effective date language with the words "as amended". All of the internal revenue code provisions referenced in H.B. 1064 can be found under various subchapters of Chapter 1. (Normal Taxes and Surtaxes) of Subtitle A. (Income Taxes) of Title 26 (Internal Revenue Code) of the United States Code, and impose the requirements of those provisions on the plan as administered by TFFR. Therefore, the federal code references in H.B. 1064 appear to qualify for the exception found under N.D. Const. art. X, § 3 because they are federal income tax laws implemented by TFFR in its administration of the plan.

Please let me know if you have any questions or would like to discuss this matter further.

Janilyn K. Murtha

LETTER OPINION
2004-L-66

October 29, 2004

Mr. Dale L. Frink, P.E.
State Engineer
900 E Boulevard Ave
Bismarck, ND 58505-0850

Dear Mr. Frink:

Thank you for your letter asking whether a county, city, or township may adopt an ordinance that incorporates future amendments to the relevant federal flood insurance study and rate map. It is my opinion that a county, city, or township may not adopt an ordinance that incorporates future revisions of a document such as the flood insurance study and rate map except through re-enactment of the ordinance to adopt a version of the map in existence at the time the amendment is adopted.

ANALYSIS

Cities, counties, and townships having authority to zone are authorized to enter into a program of flood plain management with the state engineer and to participate in the National Flood Insurance Program[1] sponsored by the federal government. N.D.C.C. §§ 61-16.2-03, 61-16.2-04.[2] Each participating community must adopt a flood plain management ordinance pursuant to the National Flood Insurance Program. N.D.C.C. § 61-16.2-05. The ordinance must first be submitted to the state engineer who will review it for compliance with N.D.C.C. ch. 61-16.2 and federal program requirements. Id. Participating communities benefit by having federal flood insurance made available to their citizens in special flood hazard areas identified in the federal flood insurance study and flood insurance rate map which are part of the ordinance. Section 3.2 of the State Model Flood Plain Management Ordinance. See also 44 C.F.R. § 59.22(a)(3) (requiring a community to submit flood plain management ordinance to qualify for flood insurance).

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[1] See Generally, 42 U.S.C. § 4001 et seq.

[2] Communities eligible to participate are any political subdivisions that have the authority to zone. N.D.C.C. § 61-16.2-02(2). Counties have authority to zone under N.D.C.C. ch. 11-33, cities have authority to zone under N.D.C.C. ch. 40-47, and townships have authority to zone under N.D.C.C. ch. 58-03.

You ask whether a county, city, or township may adopt an ordinance intended to allow the automatic adoption of revisions to the community's flood insurance study and flood insurance rate map.

Numerous courts, including the North Dakota Supreme Court, have held that a statute attempting to incorporate future changes of another statute, code, regulation, standard, or guideline is an unconstitutional delegation of legislative power to the entity publishing the referenced item. McCabe v. Workers Compensation Bureau, 567 N.W.2d 201, 204 (N.D. 1997). A state statute may adopt by reference the laws or regulations of another entity that are in existence at the time of the enactment of the adopting state statute without creating an unlawful delegation of legislative power. State v. Julson, 202 N.W.2d 145, 151 (N.D. 1972). If the state statute that adopts by reference the other entity's law or regulation provides that it is adopting the law or regulation "as amended," that adoption will be interpreted to mean the act or regulations as amended at the time of the enactment of the state statute, and will not include changes made subsequent to the enactment of the state statute. Id.[3] This rule includes adoption by reference of federal laws or regulations. Id.

Rules of statutory construction apply to ordinances. City of Fargo v. Ness, 551 N.W.2d 790, 792 (N.D. 1996). Consequently, an ordinance that attempts to adopt subsequent modifications of a law, rule, guideline, etc., will also be unconstitutional. See Professional Houndsmen of Missouri, Inc. v County of Boone, 836 S.W.2d 17, 21 (Mo. 1992); City of Salem v. Jungblut, 732 P.2d 919, 920 (Or. 1987).

Therefore, it is my opinion that a county, city, or township ordinance may adopt by reference a flood insurance study and flood insurance rate map that is in existence at the time of enactment, but may not adopt subsequent revisions except by amending the ordinance.[4]

Sincerely,

Wayne Stenehjem
Attorney General

eee/vkk

This opinion is issued pursuant to N.D.C.C. § 54-12-01. It governs the actions of public officials until such time as the question presented is decided by the courts. See State ex rel. Johnson v. Baker, 21 N.W.2d 355 (N.D. 1946).

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[3] There is an exception under N.D. Const. art. X, § 3 which allows the Legislature to adopt future amendments to federal income tax laws.

[4] A community participating in the National Flood Insurance Program has six months to adopt a new flood insurance study and flood insurance rate map after new data is submitted to the community by the Federal Insurance Administrator. 44 C.F.R. § 59.24(a).

IceMiller
LEGAL COUNSEL
One American Square | Suite 2900 | Indianapolis, IN 46282-0200

MEMORANDUM

TO: **Fay Kopp, NDRIO Deputy Executive Director and NDTFFR Chief Retirement Officer and Janilyn Murtha, Assistant Attorney General, State of North Dakota**

FROM: **Mary Beth Braitman and Tiffany A. Sharpley, Ice Miller LLP**

DATE: **January 14, 2015**

RE: **North Dakota Teachers' Fund for Retirement (TFFR) – Proposed Legislation Regarding Effective Date and Compliance Provisions**

This Memorandum is provided subject to the attorney/client privilege. To maintain that privilege, you should share its contents only with officials or employees involved in making decisions on the matters discussed herein.

This memorandum is in response to your request of January 9, 2014, and our discussions this week. In order to alleviate the state legislature from having to continuously update federal statute references, many states chose to use one of several different approaches, instead of placing a specific date in the statutory language with respect to federal tax law compliance. We understand that specific state drafting protocols and statutory interpretations are critical to considering an appropriate approach. For example, due to those, we understand you cannot use one approach that some states use – simply to have the code number, since that would then become tied to the date of the bill, which would not work in almost any case.

We have discussed below three examples of other alternative approaches used by the states:

- ***Option One***: Have code cite with "as amended."
  - For example: "Internal Revenue Code 401(a)(17), as amended."
  - The virtue of simply adding "as amended" is to eliminate the need to annually change the statutory language. Code Section 401(a)(17) is an IRS limit that is indexed. In the last 10 years it has been adjusted accordingly by the IRS eight (8) times. The "as amended" clause would have removed the need to do eight (8) amendments over the last 10 years.
  - See Utah example.
- ***Option Two***: Have code cite with a time phrase.
  - For example: "limit on compensation established from time-to-time under § 401(a)(17) of the Internal Revenue Code."
  - See Maryland example.

- ***Option Three***: Have history of increase or of changes.

  This alternative is not as popular as it once was. Over the last decade, the frequency of IRS changes (sometimes due to federal law changes, sometimes due to indexed amounts that are being triggered almost every year, sometimes due to new federal law guidance that changes positions) have made tracking those changes in a statute increasingly burdensome, complex and time consuming. This approach would likely still end up requiring some annual changes.

  - For example: "The plan must comply with the limit under Section 401(a)(17) of the Internal Revenue Code (26 U.S.C. 401(a)(17)(B) as follows: "$200,000 effective as of August 1, 2002, $205,000 as of August 1, 2004, $210,000 as of August 1, 2005, $220,000 as of August 1, 2006, $225,000 as of August 1, 2007, $230,000 as of August 1, 2008, $245,000 as of August 1, 2009, $250,000 as of August 1, 2012, $255,000 as of August 1, 2013, $260,000 as of August 1, 2014, and $265,000 as of August 1, 2015." **[*Note:* We have only tracked what was immediately available – this would have to go back to 1993.]**

EXAMPLES OF COMPLIANCE LANGUAGE APPROACHES

House Bill No. 1064 - Section 1

Topic	Federal Citation	"As Amended" Language	Comments
Salary – Annual Salary– Maximum	26 U.S.C. 401(a)(17)(B)	See below.	There are at least three ways of amending to handle annual changes.

Comments

As noted above, there are three alternative approaches.

Option One: Simply add "as amended" and strike "in effect on August 1, 2013." The virtue of simply adding to "as amended" is to eliminate the need to annually change the statutory language. Code Section 401(a)(17) is an IRS limit that is indexed. In the last 10 years it has been adjusted accordingly by the IRS eight (8) times. In many states, the "as amended" clause would have removed the need to do eight (8) amendments.

Option Two: Simply add "as adjusted from time-to-time under Section 401(a)(17) of the Internal Revenue Code" and strike "in effect on August 1, 2013" and "as adjusted for increases in the cost of living in accordance with 26 U.S.C. 401(a)(17)(B) in effect on August 1, 2013."

Option Three: Add entire section as follows:

> The plan must comply with the limit under Section 401(a)(17) of the Internal Revenue Code (26 U.S.C. 401(a)(17)(B) as follows: "$200,000 effective as of August 1, 2002, $205,000 as of August 1, 2004, $210,000 as of August 1, 2005, $220,000 as of August 1, 2006, $225,000 as of August 1, 2007, $230,000 as of August 1, 2008, $245,000 as of August 1, 2009, $250,000 as of August 1, 2012, $255,000 as of August 1, 2013, $260,000 as of August 1, 2014, and $265,000 as of August 1, 2015." Then strike extraneous language in third sentence of 15-39.1-04-10. **[Note: We simply picked up as far back as was readily available.]**

House Bill No. 1054 – Section 4

Topic	Federal Citation	"As Amended" Language	Comments
Rollover rights	26 U.S.C. 401(a)(31)	See below.	The virtue of simply referring to "as amended" is to eliminate the need to frequently change the statutory language.

Comments

Option One: Simply add "as amended" and strike "in effect on August 1, 2013" in last sentence of 15.39.1-20.

Option Two: Simply add "as amended from time-to-time under Section 401(a)(31) of the Internal Revenue Code" and strike "in effect on August 1, 2013" in last sentence of 15-39.1-20.

Option Three: Strike "in effect on August 1, 2013." This would require adding significant amount of language because of numerous federal law changes. Included would be the following:

> "Eligible retirement plan" means any of the following that accepts the distributee's eligible rollover distribution:
>
> (1) an individual retirement account described in section 408(a) of the Internal Revenue Code,
>
> (2) an individual retirement annuity described in section 408(b) of the Internal Revenue Code,
>
> (3) an annuity plan described in section 403(a) of the Internal Revenue Code,
>
> (4) a qualified trust described in section 401(a) of the Internal Revenue Code,
>
> (5) effective January 1, 2002, an annuity contract described in section 403(b) of the Internal Revenue Code,
>
> (6) effective January 1, 2002, a plan eligible under section 457(b) of the Internal Revenue Code that is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or a political subdivision of a state that agrees to separately account for amounts transferred into that plan from the retirement system, or
>
> (7) effective January 1, 2008, a Roth IRA described in section 408A of the Internal Revenue Code."

"'Eligible rollover distribution" means any distribution of all or any portion of the balance to the credit of the distributee, except that an eligible rollover distribution does not include:

(1) any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or the life expectancy) of the distributee or the joint lives (or joint life expectancies) of the distributee and the distributee's designated beneficiary, or for a specified period of ten years or more;

(2) any distribution to the extent such distribution is required under section 401(a)(9) of the Internal Revenue Code;

(3) the portion of any distribution that is not includible in gross income; provided, however, effective January 1, 2002, a portion of a distribution shall not fail to be an eligible rollover distribution merely because the portion consists of after-tax employee contributions that are not includible in gross income, but such portion may be transferred only:

(A) to an individual retirement account or annuity described in section 408(a) or (b) of the Internal Revenue Code or to a qualified defined contribution plan described in section 401(a) of the Internal Revenue Code that agrees to separately account for amounts so transferred (and earnings thereon), including separately accounting for the portion of the distribution that is includible in gross income and the portion of the distribution that is not so includible;

(B) on or after January 1, 2007, to a qualified defined benefit plan described in section 401(a) of the Internal Revenue Code or to an annuity contract described in section 403(b) of the Internal Revenue Code, that agrees to separately account for amounts so transferred (and earnings thereon), including separately accounting for the portion of the distribution that is includible in gross income and the portion of the distribution that is not so includible; or

(C) on or after January 1, 2008, to a Roth IRA described in section 408A of the Internal Revenue Code; and

(4) any other distribution which the Internal Revenue Service does not consider eligible for rollover treatment, such as certain corrective distributions necessary to comply with the provisions of section 415 of the Internal Revenue Code or any distribution that is reasonably expected to total less than $200 during the year.

A beneficiary further includes a nonspouse beneficiary who is a designated beneficiary as defined by section 401(a)(9)(E) of the Internal Revenue Code. However, a nonspouse beneficiary may only make a direct rollover to an

individual retirement account or individual retirement annuity established for the purpose of receiving the distribution, and the account or annuity shall be treated as an "inherited" individual retirement account or annuity."

Additional language changes would also be necessary.

Attachments

Amendment Notes. — The 2007 amendment, effective April 30, 2007, in Subsection (1)(c), added "who may delegate the decision to the deputy director" and in Subsection (1)(d), added "or deputy director."

The 2008 amendment by ch. 252, effective May 5, 2008, added (1)(e) and, in (2)(c), added "relevant to a decision, including facts."

The 2008 amendment by ch. 382, effective May 5, 2008, updated references to conform to the recodification of Title 63.

This section has been reconciled by the Office of Legislative Research and General Counsel.

NOTES TO DECISIONS

ANALYSIS

Due process.
Estoppel.
Judicial review.
—Exhaustion of remedies.

Due process.

Because petitioner did not file for reconsideration within ten days of the state retirement board's decision, the board did not review the hearing officer's decision in light of petitioner's specific objections; the board complied with the statutory scheme and its own internal rules in issuing the decision against petitioner and petitioner was not denied due process. Terry v. Retirement Bd., 2007 UT App 87, 157 P.3d 362.

Estoppel.

There is nothing in this section that would bar application of estoppel against the board to prevent a grave injustice to an employee who reasonably relied on the board's representation that he did not have to purchase six years of pre-1961 county service in order to receive retirement credit for them. Eldredge v. Utah State Retirement Bd., 795 P.2d 671 (Utah Ct. App. 1990).

Judicial review.

—Exhaustion of remedies.

Former employees of city hospital, who did not appeal to the retirement board an administrative determination concerning the disposition of employer contributions upon the city hospital's becoming a private entity and terminating its affiliation with the state retirement system, failed to exhaust their administrative remedies and were not entitled to judicial review of the administrative determination. Johnson v. Utah State Retirement Office, 621 P.2d 1234 (Utah 1980) (decided under predecessor to this section).

Insured seeking declaratory judgment to foreclose the subrogation rights of the Utah Public Employees Health Program (PEHP) was required first to exhaust his administrative remedies under this section. The issues in the case were not outside the agency's statutory authority, so the insured was not relieved of the exhaustion requirement on that basis. Gunn v. Utah State Ret. Bd., 2007 UT App 4, 155 P.3d 113, cert. denied, 2007 Utah LEXIS 83 (2007 Utah LEXIS 83).

49-11-614. Vesting on termination of system or plan.

If any system or the Utah Governors' and Legislators' Retirement Plan is terminated, the accrued benefits of each member in the terminated system or plan shall immediately become vested and nonforfeitable.

History: C. 1953, 49-1-613, enacted by L. 1990, ch. 273, § 6; renumbered by L. 2002, ch. 250, § 37.

49-11-615. Election to grandfather — Applicability of provisions.

(1) Notwithstanding any other provision of this title, the allowance payable to any person who becomes a member of any system, administered by the board on or after January 1, 1990, may not exceed the limitation imposed by Section 415 of the Internal Revenue Code of 1986, as amended, which is incorporated by reference.

(2) This constitutes an election of the grandfather provision under Section 415(b)(10)(C) of the Internal Revenue Code.

(2) to compute average final compensation.

(g) *Retention of credit by specified State employees.* — A State employee who came into the State system while retaining sick leave and annual leave benefits under a county system and who came under the provisions of Chapter 423 of the Acts of 1971 shall be entitled to the same full credit toward retirement as provided by this section. (An. Code 1957, art. 73B, §§ 1-101, 2-302, 3-302, 4-302, 5-302, 6-302, 7-302, 8-302, 10-213; 1994, ch. 6, § 2; 1996, ch. 438, § 3; 2005, ch. 493, § 1.)

Elected officials. — Elected officials are entitled to sick leave; and if they opt for membership in the employees' retirement system, they are entitled to retirement credit for their unused sick leave in accordance with and subject to the limitations of this section. 65 Op. Att'y Gen. 392 (1980).

§ 20-207. Limit on amount used to determine retirement allowance.

(a) *Applicability of section.* — This section does not apply to an individual who is a member of a State system on or before June 30, 1996.

(b) *Compensation limit.* — Notwithstanding any other provision of law, for plan years beginning on or after July 1, 1996, the annual compensation that may be taken into account when determining the retirement allowance payable to a member of a State system, may not exceed the compensation limit under § 401(a)(17)(B) of the Internal Revenue Code and regulations adopted thereunder. (1996, ch. 608; 2002, ch. 375.)

§ 20-208. Allowance in excess of limit on benefit accruals prohibited.

(a) *In general.* — Notwithstanding any other provision of law, the Board of Trustees may not pay an allowance that exceeds the limit on benefit accruals established from time to time under § 415 of the Internal Revenue Code.

(b) *Reduction of allowances.* — Subject to subsections (c) and (d) of this section, the Agency shall reduce:

(1) an allowance to the extent that it exceeds the dollar limit on an annual benefit established from time to time under § 415(b) of the Internal Revenue Code and the regulations adopted thereunder; and

(2) the contributions and other additions to any defined contribution plan maintained by the Board of Trustees to the extent that they exceed the limit on annual additions established from time to time under § 415(c) of the Internal Revenue Code and the regulations adopted thereunder.

(c) *Dollar limit on an annual benefit.* — (1) The dollar limit on an annual benefit is the amount set forth in § 415(b) of the Internal Revenue Code, as adjusted by the Commissioner of Internal Revenue under § 415(d) of the Internal Revenue Code as of January 1 of each calendar year.

(2) The dollar limit for a calendar year applies to a State system's fiscal year ending within that calendar year.

(d) *Postretirement adjustments.* — (1) Except as provided in paragraph (2) of this subsection, the Agency shall pay a participant whose allowance was

reduced under subsection (b) of this section any postretirement adjustment if payment of the postretirement adjustment does not exceed the dollar limit on benefits.

(2) The postretirement adjustment may not exceed a participant's basic allowance as increased by any postretirement adjustments allowable under the applicable State system.

(e) *Participants in additional aggregating retirement or pension systems.* — If an individual participates in any other retirement or pension system that must be aggregated with the State system administered by the Board of Trustees, the individual's annual benefit accrual or annual addition shall first be reduced by the other retirement or pension system to the extent necessary to comply with the requirements of § 415 of the Internal Revenue Code and the regulations adopted thereunder before any reduction is made by the Board of Trustees.

(f) *Applicability; limitation on purchase of prior service credit.* — (1) This subsection does not apply to an individual who is a member of a State system on or before June 30, 1999.

(2) Notwithstanding any other provision of law, the Agency may not allow a member to purchase prior service credit other than in accordance with the limitations and conditions set forth in § 415(n) of the Internal Revenue Code.

(g) *Prior service credit.* — A member may purchase prior service credit using funds from any fund source that is not specifically prohibited by the Internal Revenue Code. (1999, ch. 148; 2002, ch. 375.)

IceMiller
LEGAL COUNSEL

MEMORANDUM

TO: **Fay Kopp, Shelly Schumacher, Jan Murtha**

CC: **Sparb Collins**

FROM: **Mary Beth Braitman, Tiffany A. Sharpley, and Malaika Caldwell**

DATE: **August 18, 2014**

RE: **North Dakota TFFR Compliance With Respect to *U.S. v. Windsor***

This Memorandum focuses on our analysis of the impact of the U.S. Supreme Court's *U.S. v. Windsor ("Windsor")* decision and Rev. Ruling 2013-17, subsequently issued by the Internal Revenue Service ("IRS") on the North Dakota Teachers' Fund for Retirement ("TFFR").

BACKGROUND ON *WINDSOR*

In *Windsor*, the Supreme Court ruled that section 3 of the Defense of Marriage Act ("DOMA") was unconstitutional. The holding by the Supreme Court provided that same-sex spouses who were married in a state that recognizes same-sex marriage as well as in states that do not, must receive the same treatment as opposite-sex spouses for purposes of federal law. The primary effect of this decision for TFFR is that for federal tax purposes, a same-sex spouse must be treated the same as an opposite-sex spouse. The Supreme Court did not address section 2 of DOMA, which allows a state to continue to decline to recognize the validity of same-sex marriages legally performed in other states for limited state purposes. This means that North Dakota can continue to distinguish same-sex spouses from opposite-sex spouses for certain benefit design purposes. In Rev. Ruling 2013-17, the IRS has taken the position that for federal tax purposes, the terms "husband and wife," "husband," "wife," "spouse," and "marriage," wherever used in the Internal Revenue Code ("Code") must be interpreted to include both same-sex spouses and same-sex marriages. In its ruling, the IRS adopted a "place of celebration" test for determining the validity of same-sex marriage for federal tax purposes.

We were asked to consider how the federal tax rules have changed in ways which impact TFFR. TFFR is required to follow federal tax law in order to maintain its status as a qualified governmental plan.

TFFR'S TAX QUALIFICATION

The primary advantages in TFFR retaining this status under Code Section 401(a) are that:

- Employer contributions are not taxable to members as they are made (or even vested); taxation only occurs when plan distributions occur;
- Earnings and income are not taxed to the trust of the member (until distribution);

- Certain favorable tax treatment may be available to members when they receive plan distributions, e.g., ability to rollover eligible distributions;

- Employers and members do not pay employment taxes (even if the positions are Social Security covered) when contributions are made or when benefits are paid.

- TFFR is currently exempt from many costly and cumbersome Employee Retirement Income Security Act of 1974 ("ERISA") nondiscrimination testing requirements;

- TFFR may "pick up" employee contributions so that they are pre-tax when made; and

- TFFR has favorable grandfathering and transitional rules under much IRS guidance.

BASIS FOR OUR *WINDSOR* REPORT

We prepared our Report and analysis using the North Dakota materials provided by Ms. Murtha on July 3, 2014. For TFFR, this included the following:

- North Dakota Constitution, Article X, Section 12(1);
- N.D.C.C. ("Century Code") Chapter 15-39.1;
- N.D.A.C. Article 82-05;
- AG Letter Opinion 2013-L-06; and
- N.D.C.C. Sections 14-03-01 through 14-03-08.

Our Report entailed an analysis of the impact of *Windsor* on the following TFFR plan provisions. Each of these provisions involved situations where North Dakota law provides for certain benefits or rights for spouses of members of TFFR. In each case, we were looking for scenarios in which the provision could remain as it is currently, versus when it was affected by federal tax law, and thus by the *Windsor* decision.

- Beneficiary Designation Rules;

- Plan Rollovers;

- Benefit Limitations under Code Section 415;

- Record Confidentiality;

- Survivor & Death Benefits;

- Qualified Domestic Relations Orders (QDROs); and

- Required Minimum Distributions (RMDs).

I. Areas of Immediate Compliance

During our review of these area, we broke our analysis down into three types of provisions – those governed by: (i) pure federal law; (ii) pure North Dakota state law; and (iii) a combination of both federal and state law. This review identified the need for TFFR to make few **immediate** compliance changes. However, as you may be aware, there are court cases pending in all circuits that raise certain issues that we will not address here, because these issues have not been decided by the U.S. Supreme Court. There are areas described in our review that may need to be revisited depending on the outcome of pending litigation cases. These are not discussed further in this memorandum. Our recommendations identify only those areas for the TFFR Board to consider for immediate action.

A. Rollovers

N.D.C.C § 15-39.1-20 – Withdraw from Fund. We recommend the last line of this provision be revised to remove the date at the end of the provision which appears to limit the reference to the Internal Revenue Code section regarding rollovers to a specific date and time, which could raise questions since that date predates the *Windsor* decision.

> A member or beneficiary of a member may elect, at the time and under rules adopted by the Board, to have any portion of an eligible rollover distribution paid in a direct rollover to an eligible retirement plan specified by the member or the beneficiary to the extent permitted by Section 401(a)(31) of the Internal Revenue Code ~~in effect on August 1, 2011.~~

Under the current language, all spouses would not have broad rollover rights. *Windsor* requires those broad rollover rights to be made available to same-sex spouses as of the effective date of the *Windsor* decision, as well as opposite-sex spouses.

B. Benefit Limitations

N.D.C.C § 15-39.1-10.6 – Benefit Limitations. We recommend a revision to the following provision to remove the date references, which appears to limit the reference to the Internal Revenue Code section to a specific date and time, which could raise questions since that date is after the effective date imposed by *Windsor*.

> Benefits with respect to a member participating under former chapter 15-39 or chapter 15-39.1 or 15-39.2 may not exceed the maximum benefits specified under section 415 of the Internal Revenue Code [26 U.S.C. 415] ~~in effect on August 1, 2013,~~ for governmental plans. The maximum dollar benefit applicable under section 415(b)(1)(A) of the Internal Revenue Code must reflect any increases in this amount provided under section 415(d) of the Internal Revenue Code ~~subsequent to August 1, 2013~~. . .

Windsor requires that the benefit limitations be administered to treat all spouses the same for purposes of applying these limits.

C. Required Minimum Distributions

N.D.C.C § 15-39.1-10 . . . We recommend a revision to the provision to remove the date reference, which appears to limit the reference to the Internal Revenue Code section to a specific date and time, which could raise questions since that date is after the effective date imposed by *Windsor*.

> (4) . . . payment of minimum distributions must be made in accordance with Section 401(a)(9) of the Internal Revenue Code ~~in effect on August 1, 2013,~~ and the regulations issued under that section as applicable to governmental plans.

The minimum distribution rules require distributions from a qualified plan to be made at certain times. Those times vary depending on whether the benefit is payable to a spouse or a non-spouse. *Windsor* requires that all spouses (both same-sex and opposite-sex) be treated the same for this timing issue.

ADDITIONAL COMMENTS

In addition to the immediate areas of compliance described above, we also identified several administrative tools that TFFR may want to consider revising. These include potential changes to 415 testing, tax notices, retirement and survivor forms, and QDRO forms.

LETTER OPINION
2013-L-06

December 12, 2013

Mr. Richard J. Riha
Burleigh County State's Attorney
514 E Thayer Ave
Bismarck, ND 58501-4413

Dear Mr. Riha:

Thank you for your letter raising several questions relating to the effects a same-sex marriage, legally valid and entered in another state, has on an individual seeking a marriage license in North Dakota, where such a union is not recognized. You first ask whether a county recorder may issue a marriage license to an individual who had previously entered into a same-sex marriage which was valid in another state, did not obtain a divorce, and is now seeking to enter into a marriage legally recognized in North Dakota. You further ask whether such an individual would be committing a criminal violation by signing a marriage application, under oath, stating that he or she is "Single/Never Married." Finally, you ask whether the individual risks violating another state's bigamy statute if that individual obtains a marriage license in North Dakota, and moves back to a state in which the previous, same-sex marriage is valid and recognized.

For the reasons discussed below, it is my opinion because explicitly prohibited by state constitution and statutes, an individual's previously valid same-sex marriage in another state is not legally recognized in North Dakota and he or she may be issued a valid marriage license here. Further, it is my opinion that since the North Dakota Constitution prohibits the recognition of such a union, the individual would not be committing a criminal violation in this state by indicating he or she was "Single/Never Married" on a signed marriage application. Finally, I decline to opine on the interpretation of another state's law and defer to state legislatures to resolve this unique issue.

ANALYSIS

I.

I first address your question of whether a county recorder may issue a North Dakota marriage license to an individual who previously entered into a same-sex marriage, valid in another state, when that marriage is not recognized in this state, and our license application requires legal dissolution of a prior marriage.[1]

In order to answer this question, I first turn to North Dakota's Constitution explicitly defining "marriage" to be between one man and one woman:

> Marriage consists only of the legal union between a man and a woman. No other domestic union, however denominated, may be recognized as a marriage or given the same or substantially equivalent legal effect.[2]

State statute contains similar restrictions:

> Marriage is a personal relation arising out of a civil contract between one man and one woman to which the consent of the parties is essential. The marriage relation may be entered into, maintained, annulled, or dissolved only as provided by law. A spouse refers only to a person of the opposite sex who is a husband or a wife.[3]

North Dakota also prohibits recognition of a same-sex marriage that is valid in the jurisdiction in which it was contracted. North Dakota's recognition of foreign marriages is governed by N.D.C.C. § 14-03-08, which states:

> Except when residents of this state contract a marriage in another state which is prohibited under the laws of this state, all marriages contracted outside this state, which are valid according to the laws of the state or country where contracted, are valid in this state. This section applies only to a marriage contracted in another state or country which is between one man and one woman as husband and wife.[4]

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[1] N.D.C.C. § 14-03-06 "A marriage contracted by a person having a former husband or wife living, if the former marriage has not been annulled or dissolved, is illegal and void from the beginning unless such former husband or wife was absent and believed by such person to be dead for a period of five years immediately preceding such marriage."
[2] N.D. Const. art. XI, § 28 (emphasis added).
[3] N.D.C.C. § 14-03-01 (emphasis added).
[4] N.D.C.C. § 14-03-08 (emphasis added).

In interpreting this statute prior to the 1997 amendment, the Supreme Court of North Dakota held that marriages validly entered in other territories would be recognized in North Dakota unless expressly prohibited by law.[5] North Dakota Constitution art. XI, § 28 and N.D.C.C. § 14-03-01, expressly prohibit a marriage between persons of the same-sex, and therefore North Dakota does not recognize a same-sex marriage, as codified in N.D.C.C. § 14-03-08.

The extent to which North Dakota must recognize the laws of another state is governed by the Full Faith and Credit Clause ("Clause") of the United States Constitution. The Clause provides: "Full Faith and Credit shall be given in each State to the public Acts, Records, and judicial Proceedings of every other State. And the Congress may by general Laws prescribe the Manner in which such Acts, Records and Proceedings shall be proved and the Effect thereof."[6] The United States Supreme Court, however, in applying the Full Faith and Credit Clause, made clear it "does not require a State to apply another State's law in violation of its own legitimate public policy." Nevada v. Hall, 440 U.S. 410, 422 (1979) (citing Pacific Ins. Co. v. Indus. Accident Comm'n, 306 U.S. 493 (1939)). The Court recognized marriage "has always been subject to the control of the legislature." Maynard v. Hill, 125 U.S. 190, 205 (1888). Thus, the Clause does not require one state to recognize and abide by the legislative judgments of another state concerning the recognition and validity of marriage if doing so would be contrary to its own "public policy."

North Dakota's public policy to limit "marriage" to one man and one woman and prohibit recognition of same-sex marriages is articulated in, and supported by, the legislative history of N.D.C.C. §§ 14-03-01 and 14-03-08 and N.D. Const. art. XI, § 28.

In 1997, the Fifty-fifth Legislative Assembly amended state marriage statutes defining the relationship as being between one man and one woman.[7] Amendments were passed defining spouse as being a person of the opposite sex who is a husband or wife.[8] Further

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[5] See Johnson v. Johnson, 104 N.W.2d 8 (N.D. 1960) (North Dakota Supreme Court recognized a marriage valid and legally entered in another state, when such a marriage was not prohibited by the laws of North Dakota). See also, Pearson v. Person, 606 N.W.2d 128, 131 (N.D. 2000) (although common law marriage cannot be entered into in North Dakota, such a marriage validly entered into in Canada may be entitled to recognition in North Dakota under N.D.C.C. § 14-03-08, because North Dakota law does not expressly prohibit such a marriage). Since same-sex marriages are expressly prohibited and not recognized in North Dakota, a same-sex marriage validly entered into in another state is not afforded recognition under N.D.C.C. § 14-03-08.
[6] U.S. Const. art. IV, § 1; see also 28 U.S.C. § 1738.
[7] 1997 N.D. Sess. Laws ch. 145, § 1.
[8] Id.

amendment of state statute regulating what foreign marriages this state will recognize was made:

> 14-03-08. Foreign marriages recognized – Exception. ~~All~~ Except when residents of this state contract a marriage in another state which is prohibited under the laws of this state, all marriages contracted outside ~~of~~ this state, which are valid according to the laws of the state or country where contracted, are valid in this state. ~~This section does not apply when residents of this state contract a marriage in another state which is prohibited under the laws of North Dakota.~~ This section applies only to a marriage contracted in another state or country which is between one man and one woman as husband and wife.[9]

The legislature even went so far as to add the following effective date to the amendments:

> If the legislature of another state enacts a law under which a marriage between two individuals, other than between one man and one woman, is a valid marriage in that state or the highest court of another state holds that under the law of that state a marriage between two individuals, other than between one man and one woman, is a valid marriage, the governor of this state shall certify that fact to the legislative council. The certification must include the effective date of the other state's legislation or the date of the court decision. Sections 1 and 2 of this Act are effective as of the earlier of the effective date of that law or the date of that decision.[10]

In a letter to the Senate Judiciary Committee, a Senate bill sponsor wrote:

> This bill is needed in our State to combat recognition of marriages other than between a man and woman now happening in other states - - the most obvious, Hawaii.[11]

A state Representative also testified before the committee:

> This bill is a definition-of-marriage bill, not a gay-bashing bill. It would define marriage and spouse in Century Code for use in interpreting and applying laws. It would also allow the state to recognize marriages only between one man and one woman as husband and wife.

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[9] Id. § 2.
[10] Id. § 3.
[11] Hearing on S.B. 2230 Before the S. Comm. on the Judiciary, 1997 N.D. Leg. (Feb. 5) (Statement of Sen. Watne).

> This would specify the type of union that the state would recognize as a marriage and would eliminate platonic relationships being recognized as such. Seventeen states have passed similar legislation.[12]

An additional Senate bill sponsor gave the following testimony before the House Judiciary Committee:

> As sponsor, I want to emphasize that the goal of this legislation is to treat people who may move here the same way we treat our own citizens --- the same way we have always treated our own citizens.
>
> Our law, going way back to our early statehood, says we will not recognize marriages in North Dakota that are not between one man and one woman. Furthermore, if a resident leaves the state to enter into some other type of marriage, we will not recognize it. Since they made that clear, I am confident that it was the will of our founders that other types of marriages not be recognized if the partners are just moving here.
>
> I do not consider our founders, who originated this section of law, to be homophobes or bigots. They had never even heard of aids [sic]. They wrote this section of law because they recognize the importance and sanctity of the institution of marriage and they recognized that the institution of marriage is a cornerstone of the type of orderly society that has been in North Dakota for over 100 years.[13]

It is clear the legislators' intent at the time of these amendments was to limit the state's recognition of foreign marriages to those between one man and one woman. The statutory language has remained unchanged. Further, the people of North Dakota voted in the general election of 2004 to add article XI, § 28 to the Constitution, which states, "[m]arriage consists only of the legal union between a man and a woman. No other domestic union, however denominated, may be recognized as a marriage or given the same or substantially equivalent legal effect." The amendment placed into our state constitution language makes it clear no other type of union can be recognized or given any legal effect.[14]

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[12] Hearing on S.B. 2230 Before the S. Comm. on the Judiciary, 1997 N.D. Leg. (Feb. 5) (Statement of Rep. Sandvig).
[13] Hearing on S.B. 2230 Before the H. Comm. on the Judiciary, 1997 N.D. Leg. (Mar. 11) (Statement of Sen. Christmann).
[14] N.D. Const. art. XI, § 28.

Other federal law is relevant in my analysis. Congress, in enacting the federal Defense of Marriage Act[15] (DOMA) legislatively addressed the issue of inter-state recognition of same-sex marriages. DOMA Section 2 provides:

> No State, territory, or possession of the United States, or Indian tribe, shall be required to give effect to any public act, record, or judicial proceeding of any other State, territory, possession or tribe respecting a relationship between persons of the same sex that is treated as a marriage under the laws of such other State, territory, possession, or tribe, or a right or claim arising from such relationship.[16]

As DOMA articulates, there is no mandate under federal law for one state to recognize the same-sex marriage formed in another state.

With no federal mandate requiring North Dakota to recognize a same-sex marriage performed in another state, and a clear public policy of "marriage" being as between one man and one woman embedded into our state constitution, it is my opinion that, under the law, the State of North Dakota does not recognize a same-sex marriage legally performed in another state, and that non-recognition is not in violation of the Full Faith and Credit Clause.

Accordingly, under these facts, it is my opinion that, even if not legally dissolved, the individual's previous marriage cannot be recognized in the State of North Dakota and a county recorder may issue a valid marriage license in accordance with N.D.C.C. ch. 14-03.

II.

Next, you question whether the individual in these facts would, when filling out a North Dakota marriage license application, states that he/she is "Single/Never Married" and signs that application under oath, be committing a criminal violation.

The answer to your first question is determinative of the answer to your second question. As previously discussed, state law explicitly does not recognize any marriage other than one between one man and one woman, nor does it recognize any rights associated with the union. While the marriage may be valid elsewhere, the North Dakota Constitution and

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[15] Pub. L. 104-199, 110 Stat. 2419 (Sept. 21, 1996).

[16] 28 U.S.C.A. § 1738C. I note that in United States v. Windsor, 133 S.Ct. 2675 (2013), the United States Supreme Court struck down Section 3 of DOMA which defined for federal purposes "marriage" as a legal union between one man and one woman and "spouse" as a person of the opposite sex who is a husband or a wife. Section 2 was not challenged and was not addressed by the Court.

statutes prohibit its legal recognition. As such, it is my opinion the individual would not be committing a criminal violation in this state by indicating he or she was "Single/Never Married" on a signed marriage application.

III.

Finally, you pose a scenario where the newly-married opposite-sex couple returns to a state that recognizes same-sex marriage and question whether the individual then risks violating that state's bigamy statute. As Attorney General of North Dakota, it would be inappropriate in a legal opinion to interpret the laws of other states.

Sincerely,

Wayne Stenehjem
Attorney General

nrm/slv/vkk

This opinion is issued pursuant to N.D.C.C. § 54-12-01. It governs the actions of public officials until such time as the question presented is decided by the courts.[17]

[17] See State ex rel. Johnson v. Baker, 21 N.W.2d 355 (N.D. 1946).

TEACHERS' FUND FOR RETIREMENT

Whereas, the mandatory contributions by employers have increased by 64.51% since 2008 to the current annual rate of 12.75%; and

Whereas, the mandatory contributions to employees have increased by 51.61% since 2012 to the current annual rate of 11.75%; and

Whereas, these mandatory contribution rates are now locked in until the plan is funded at a level equal to 100% of the actuarial projected liability of the plan; and

Whereas, as of 7/1/2013 the plan was only funded at a level of 58.8% and the 100% target will most likely not be achieved in the next 20 years; and

Whereas, the increases in mandatory contributions haven't been fully funded by earmarked increases in state funding to school districts; and

Whereas, the increases in mandatory contributions have made it even more difficult to negotiate salary packages with certified staff; and

Whereas, this problem will be perpetuated by future increases in certified staff salaries and by the new hires being automatically included in the current TFFR system;

Therefore, be it resolved that NDSBA shall support any of the following solutions to help address this critical issue:

1. A separate state appropriation that gives each school district an annual amount equal to 5% of their certified staff payroll, until such time as the rollback occurs to the pre-2008 contribution levels.
2. A series of catch-up allocations from the state's general fund sufficient to fund the plan to100%.
3. A rollback to the pre-2008 contribution levels when the TFFR plan is funded at 70% with the post-2008 increased contribution rates paid by state funds until the plan is 100% funded.
4. Agreement to study the present funding system for TFFR and explore other possible solutions with appropriate stakeholder. Comprehensive study should include potential costs considerations, funding sources, legal implications, and impact on employees, employers and the state.

TFFR Investment Update

Interim Report

January 15, 2015

Dave Hunter

Executive Director/Chief Investment Officer

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

TFFR Investment Update – January 15, 2015

Net Returns – TFFR generated a net return of 9.8%, 13.3% and 10.1% over the last 1-, 3- and 5-year periods ended September 30, 2014, respectively. TFFR also generated positive excess return during each of these periods ranging from 1.05% last year to 0.65% in the last 5-years.

Risk Update – Portfolio volatility was within prescribed risk tolerances at 104% of the policy benchmark for the 5-years ended September 30, 2014, versus a policy limit of 115%. Actual "Portfolio Risk", as measured by standard deviation", is well within approved guidelines.

Return Peer Performance - On an asset allocation adjusted basis, TFFR's returns for the 1-, 3- and 5-year periods ended September 30, 2014, range between the 23rd and 27th percentile (based on Callan's Public Fund Sponsor Database of over 200 public pension plans). On an unadjusted basis, TFFR's returns rank in the 32nd to the 40th percentile.

Risk Peer Performance - During the "Last 10 Years", Portfolio Risk has declined by 55% from 12.5% to 5.5%. TFFR's peer risk rating has migrated from the 1st quartile (or 7th percentile) in the "Last 10 Years" to the 3rd quartile (or 64th percentile) in the "Last 3 Years" (noting that a lower standard deviation is generally preferred).

Preliminary 12/31/14 Update – TFFR's net investment returns for the six-months ended 12/31/14 are less than 1% and reflective of the overall weakness in the global capital markets, but are still estimated to exceed policy benchmark (based on the plan's stated asset allocation levels) by 0.25% to 0.30% during the last six months (preliminary and unaudited).

TFFR Investment Ends – September 30, 2014

Pursuant to Section D.3 of the SIB Governance Manual, SIB clients should receive 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 rate of return, (b) standard deviation and (c) risk adjusted excess return, to the client's policy benchmark over a minimum period of 5 years.

	1 Yr Ended 9/30/2014	3 Yrs Ended 9/30/2014	5 Yrs Ended 9/30/2014	Risk 5 Yrs Ended 9/30/2014	Risk Adj Excess Return 5 Yrs Ended 9/30/2014
TEACHERS' FUND FOR RETIREMENT (TFFR)					
Total Fund Return - Net	9.81%	13.32%	10.08%	9.57%	**0.27%**
Policy Benchmark Return	8.77%	12.37%	9.43%	9.21%	
Excess Return	1.05%	0.95%	**0.65%**	**104%**	

Net Return: TFFR's net investment rate of return for the 5-year period ended September 30, 2014 was 10.08% versus a policy benchmark of 9.43% resulting in an **Excess Return of 0.65%**.

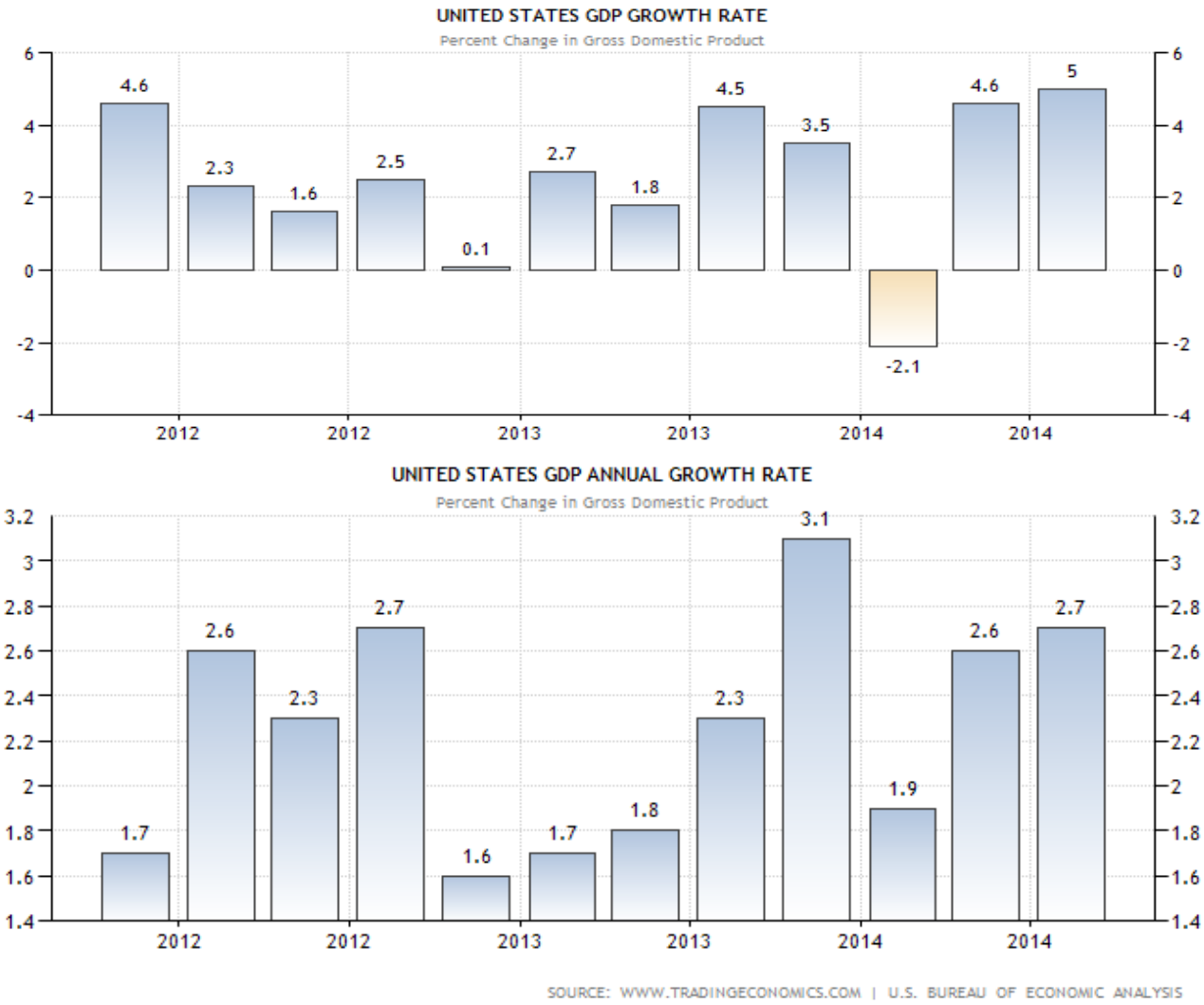
Risk: TFFR's standard deviation for the 5-year period ended September 30, 2014 was 9.57% versus a policy benchmark of 9.21% resulting in a **portfolio risk ratio of 104%**. This is within TFFR's stated risk tolerance which indicates this ratio should **not exceed 115%**.

The Risk-Adjusted Excess Return of TFFR's portfolio (net of fees and expenses) was **0.27%** for the 5-year period ended September 30, 2014, thereby exceeding the stated policy benchmark.

Capital Markets Update

As of September 30, 2014

U.S Economy – GDP Growth Rates



- Quarterly GDP Growth Rates have been volatile as evidenced by the -2.1% rate in Q1/14 being preceded by +3.5% in Q4/13 and followed by +4.6% in Q2/14.
- In contrast, annual GDP Growth Rates have displayed slow to moderate growth of 1.6% to 3.1% since 2012 and were 2.7% at 3Q/14.

U.S Labor Market Conditions

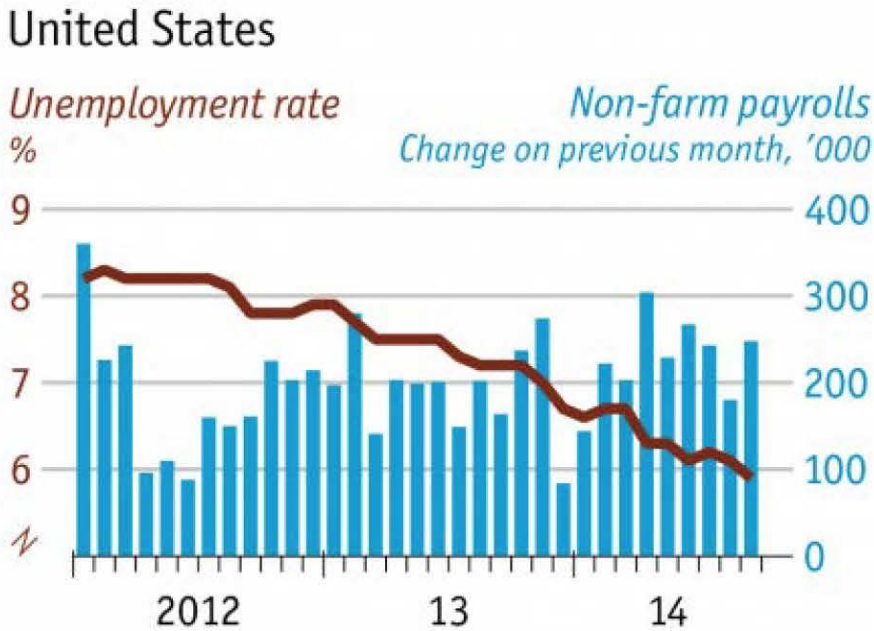
Note: Cross-hatched area represents recession.

The U.S. Unemployment Rate has declined to <u>5.6% as of December 2014</u> after peaking at 10.0% in October of 2009 and <u>falling to 6.7% as of December 2013</u>.

Source: U.S. Department of Labor: Bureau of Labor Statistics

Employment Picture

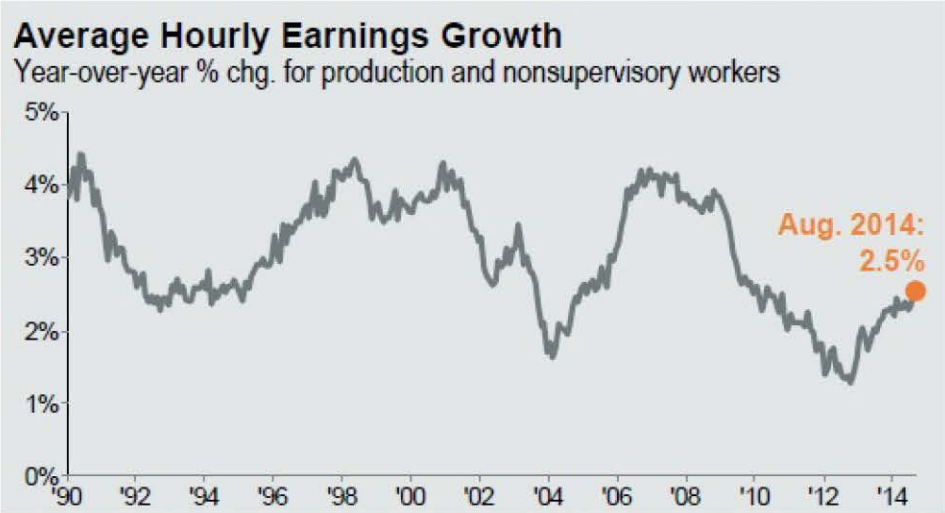
Periods Ending September 30, 2014



Sources: The Economist, Bureau of Labor Statistics

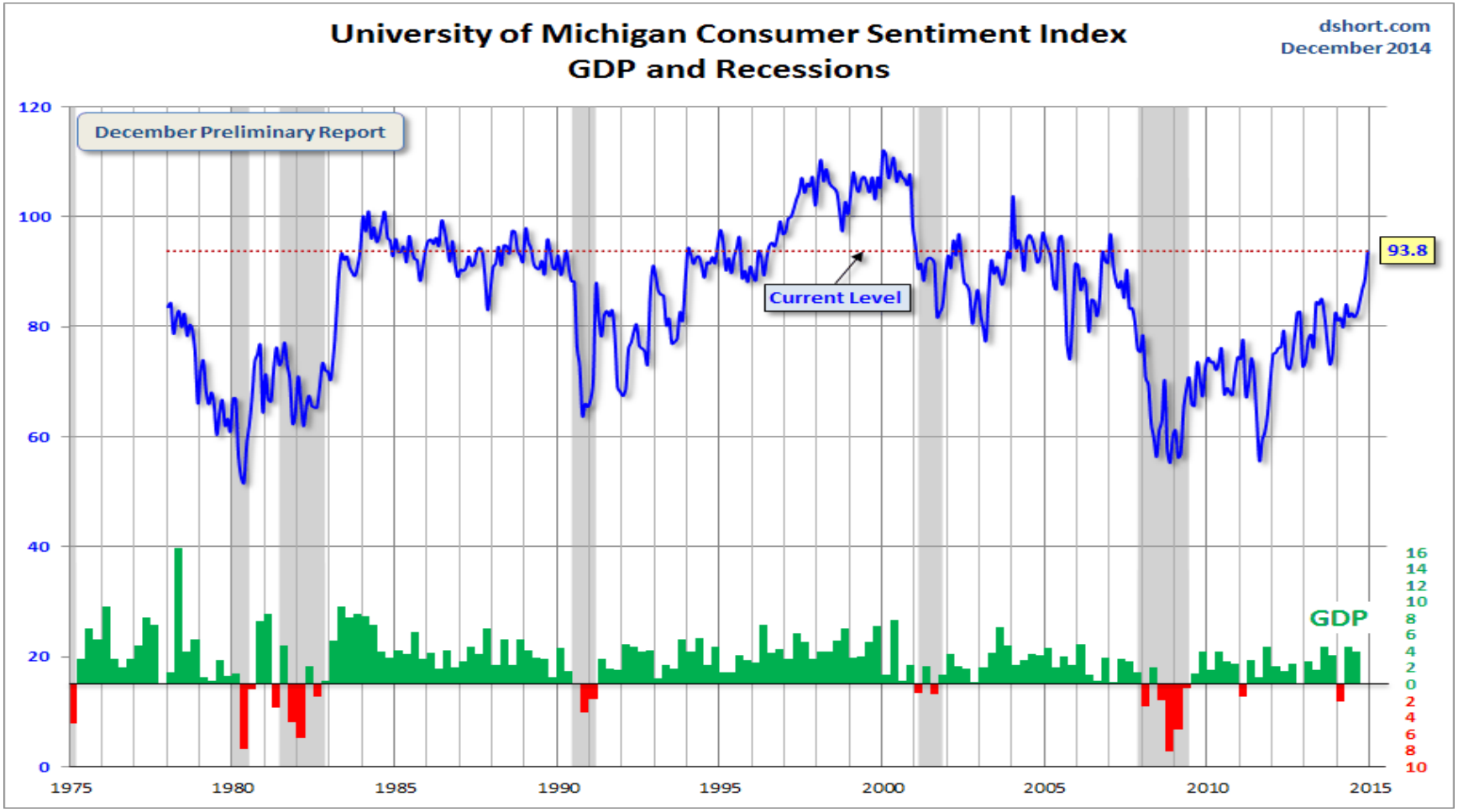
- 50-year average unemployment rate within the US has been 6.1%.
- As of the end of October, the US unemployment rate was 5.8%, the lowest it has been since July 2008.

Source: US Department of Labor's Bureau of Labor Statistics



Source: JPM Guide to the Markets, September 30, 2014

U.S Consumer Sentiment



Summary: Consumer sentiment is trending up and is now above the historical average since inception of 85.1 and the historical non-recession average of 87.4. *Source: University of Michigan*

Asset Class Performance

Periods Ending September 30, 2014

- Russell 2000 worst for quarter, down 7.4%
- Large cap rocks! S&P 500 up 1.1% for quarter and 19.7% for trailing year
- Aggregate bond index rose 0.2% for quarter and 4.0% for the trailing year
- Developed non-US equities (MSCI EAFE) lag domestic equities over 3-, 5-, and 10-year periods

11/14/14	MTD	YTD
S&P 500	1.2%	12.3%
Russell 2000	0.1%	2.0%
EAFE	-0.1%	-2.9%
EM	-2.4%	1.4%
BC Agg	0.1%	5.2%
HY*	-0.4%	4.3%
BC TIPS	0.1%	4.6%

* Barclays High Yield 2% Constrained Index

Periodic Table of Investment Returns for Periods Ended September 30, 2014

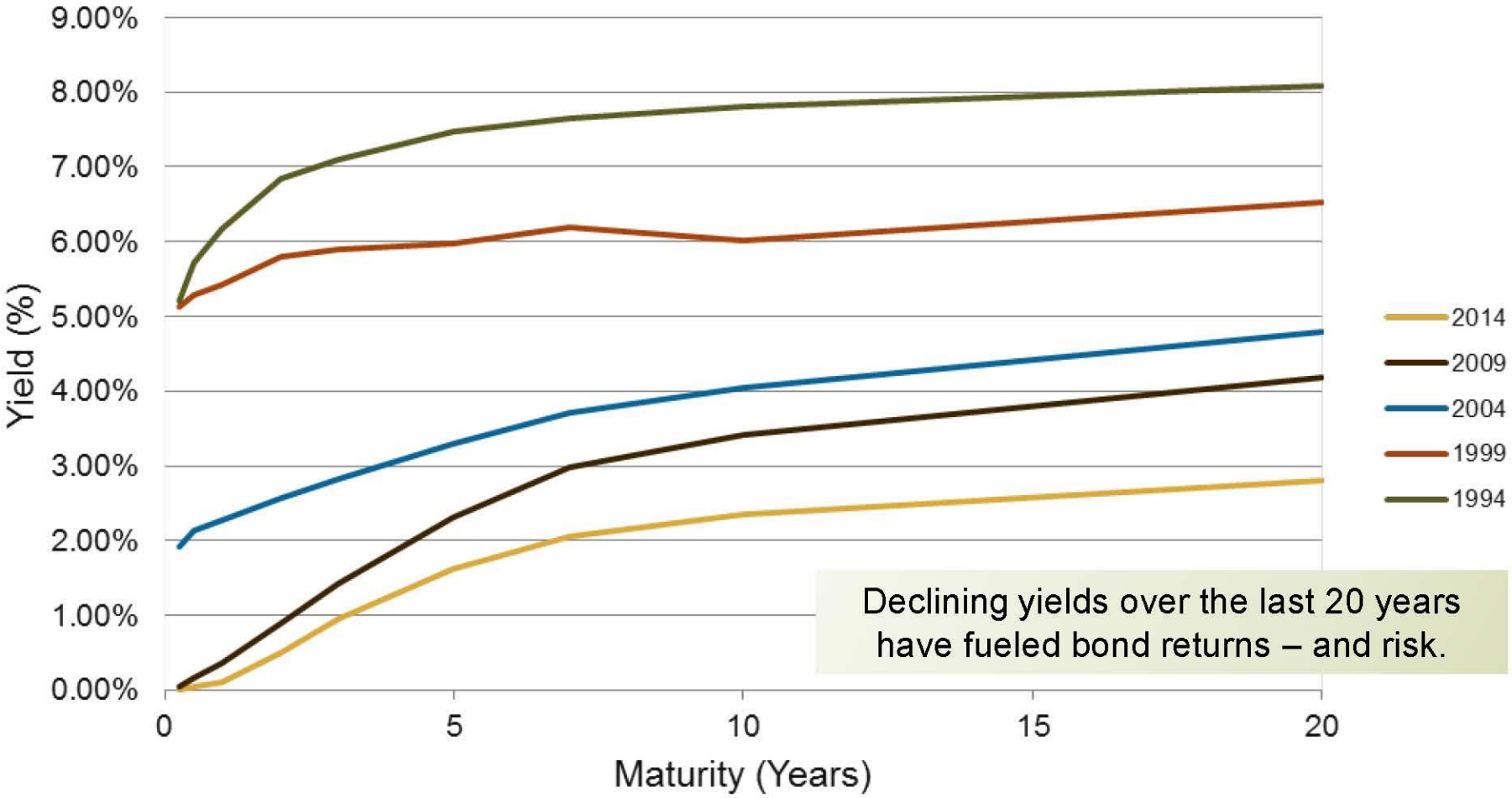
Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
S&P:500 1.1%	S&P:500 19.7%	S&P:500 23.0%	S&P:400 Mid Cap 16.4%	MSCI:Emer Markets 11.0%
Barclays:Aggregate Index 0.2%	S&P:400 Mid Cap 11.8%	S&P:400 Mid Cap 22.4%	S&P:500 15.7%	S&P:400 Mid Cap 10.3%
3 Month T-Bill 0.0%	MSCI:Emer Markets 4.7%	Russell:2000 Index 21.3%	Russell:2000 Index 14.3%	Russell:2000 Index 8.2%
MSCI:Emer Markets (3.4%)	MSCI:EAFE US$ 4.3%	MSCI:EAFE US$ 13.6%	MSCI:EAFE US$ 6.6%	S&P:500 8.1%
S&P:400 Mid Cap (4.0%)	Barclays:Aggregate Index 4.0%	MSCI:Emer Markets 7.6%	MSCI:Emer Markets 4.8%	MSCI:EAFE US$ 6.3%
MSCI:EAFE US$ (5.9%)	Russell:2000 Index 3.9%	Barclays:Aggregate Index 2.4%	Barclays:Aggregate Index 4.1%	Barclays:Aggregate Index 4.6%
Russell:2000 Index (7.4%)	3 Month T-Bill 0.0%	3 Month T-Bill 0.1%	3 Month T-Bill 0.1%	3 Month T-Bill 1.6%

Asset allocation and sector diversification is critical.

Historical Yield Curves

As of October 31, 2014

Treasury Yield Curve



Source: U.S. Treasury Department
Excludes 1-Month and 30-Year Treasuries as yields were not available for all time periods.

Historical Asset Class Market Returns and Key Economic Indicators

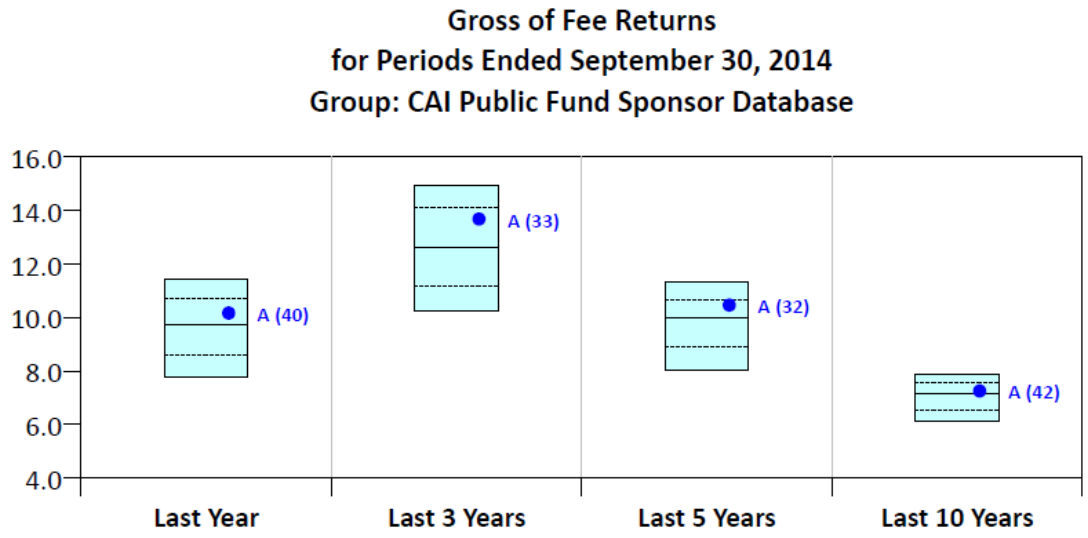
		Period Ended September 30, 2014			
Asset Class	**Benchmark**	**1-Year**	**3-Years**	**5-Years**	**10-Years**
Large Cap US Stocks	Russell 1000	19.01%	23.23%	15.90%	8.46%
Small Cap US Stocks	Russell 2000	3.93%	21.26%	14.29%	8.19%
Non-US Stocks (Developed)	MSCI EAFE	4.25%	13.65%	6.56%	6.32%
Non-US Stocks (Emerging)	MSCI Emerging Markets	4.66%	7.56%	4.76%	11.03%
US Bonds	Barclays Aggregate	3.96%	2.43%	4.12%	4.62%
High Yield Bonds	Barclays Corporate High Yield	7.20%	11.09%	10.57%	8.33%
Non-US Debt	Citi Non-US World Govt	-0.99%	-1.13%	1.01%	3.99%
Inflation Protected	Barclays Global Inflation Linked	3.44%	3.52%	4.39%	5.09%
Real Estate	NCREIF	11.26%	11.08%	10.99%	8.55%

Recent Quarterly Indicators	3Q14	2Q14	1Q14	4Q13	3Q13	2Q13	1Q13	4Q12
GDP Growth	3.9%	4.6%	-2.1%	3.5%	4.5%	1.8%	2.7%	0.1%
Unemployment Rate	5.9%	6.2%	6.7%	6.7%	7.2%	7.5%	7.5%	7.9%
CPI	1.7%	2.1%	1.5%	1.5%	1.2%	1.8%	1.5%	1.7%
Consumer Sentiment (Dec . 93.8)	86.4	82.8	80.9	76.9	81.6	81.7	76.7	79.4

TFFR Investment Review

As of September 30, 2014

TFFR Public Fund Peer Comparison – Gross Returns
As of 9/30/14



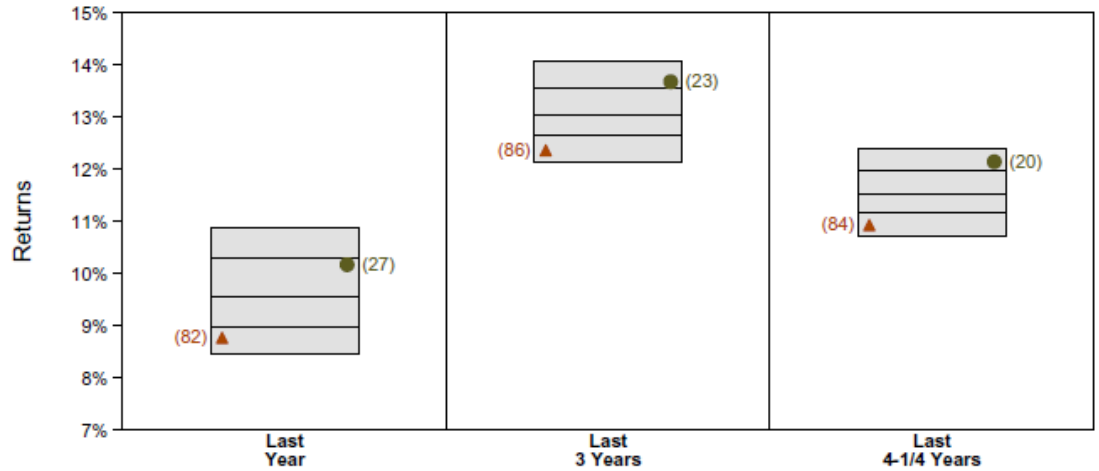
	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	11.45	14.91	11.33	7.88
25th Percentile	10.70	14.11	10.67	7.55
Median	9.75	12.64	10.00	7.15
75th Percentile	8.61	11.19	8.93	6.57
90th Percentile	7.77	10.24	8.04	6.14
Member Count	224	214	200	173
Total Fund-TFFR ● A	10.17	13.68	10.47	7.26

Callan Returns: TFFR generated 2nd returns for the 1-, 3-, 5- and 10-year periods ended September 30, 2014 on an unadjusted asset allocation basis, when compared to public fund peers.

Note: TFFR Fund and peer performance are based on Callan's calculation of gross returns. *Source: Callan*

Peer Return Comparison – Asset Allocation Adjusted Basis
As of 9/30/14

Asset Allocation Adjusted Ranking



	Last Year	Last 3 Years	Last 4-1/4 Years
10th Percentile	10.89	14.08	12.40
25th Percentile	10.29	13.57	11.98
Median	9.55	13.06	11.54
75th Percentile	8.97	12.67	11.18
90th Percentile	8.44	12.14	10.73
Total Fund ●	10.17	13.68	12.15
Policy Target ▲	8.77	12.37	10.93

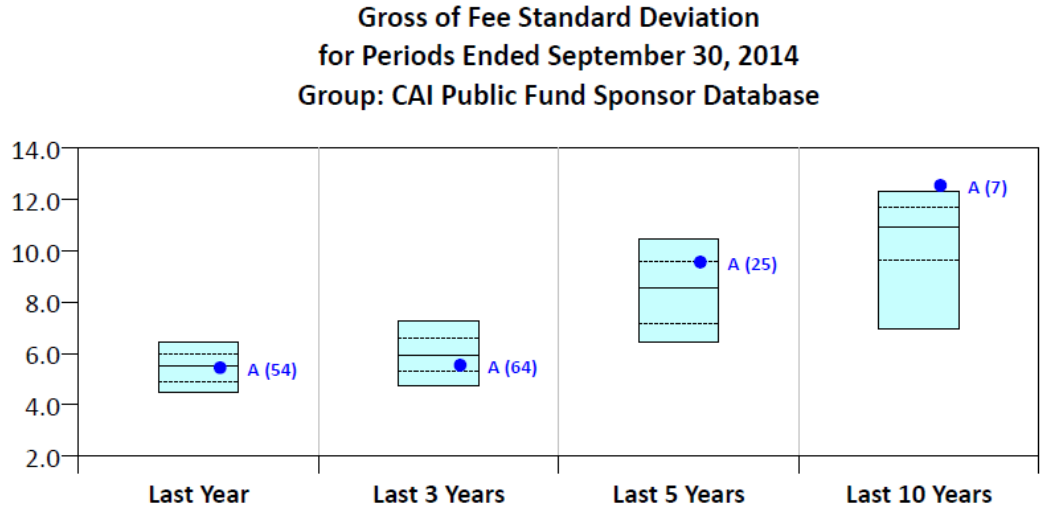
* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% MSCI World Index, 12.0% Barclays Aggregate Index, 11.8% MSCI EAFE Index, 10.0% NCREIF Total Index, 5.0% CPI-W, 5.0% Barclays HY Corp 2% Issue, 5.0% NDSIB TFFR - Private Equity, 5.0% Barclays Global Agg ex US, 5.0% NCREIF Timberland Index, 4.8% Russell 2000 Index, 2.8% Emerging Mkts - Net and 1.0% 3-month Treasury Bill.

Callan Returns: TFFR generated returns ranging between 20th and 27th percentile on asset allocation adjusted basis for the 1-, 3- and 4-1/4 year period ended September 30, 2014, when compared to public fund peers.

Note: TFFR Fund and peer performance are based on Callan's calculation of gross returns. *Source: Callan*

Public Fund Peer Comparison – Standard Deviation
As of 9/30/14

Standard deviation is used to measure investment (or portfolio) volatility whereas a lower standard deviation is generally preferred over a higher standard deviation.



	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	6.45	7.28	10.46	12.31
25th Percentile	5.98	6.58	9.58	11.70
Median	5.51	5.93	8.54	10.95
75th Percentile	4.92	5.32	7.18	9.63
90th Percentile	4.47	4.76	6.47	6.95
Member Count	224	214	200	173
Total Fund-TFFR ● A	5.45	5.55	9.57	12.55

Standard Deviation of Callan Returns: The TFFR Fund generated 3rd quartile standard deviation for the 3-year period, and 1st quartile standard deviation for the 5- and 10-year period ended September 30, 2014 when compared to public fund peers (unadjusted basis).

Note: TFFR Fund and peer performance are based on Callan's calculation of gross returns. *Source: Callan*

TFFR Total Fund Attribution
One Year Ended September 30, 2014

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	23%	21%	16.44%	15.53%	0.19%	0.08%	0.28%
Domestic Fixed Income	17%	17%	7.01%	4.91%	0.38%	(0.01%)	0.37%
Real Estate	10%	10%	15.75%	11.26%	0.41%	(0.02%)	0.39%
Timber	4%	5%	2.62%	10.38%	(0.36%)	(0.02%)	(0.38%)
Infrastructure	4%	5%	12.10%	1.58%	0.41%	0.08%	0.50%
International Equity	15%	15%	4.91%	4.33%	0.09%	(0.03%)	0.06%
International Fixed Incom	5%	5%	2.57%	(0.81%)	0.18%	0.00%	0.18%
Private Equity	5%	5%	6.69%	6.69%	0.00%	(0.01%)	(0.01%)
World Equity	16%	16%	12.03%	12.20%	(0.04%)	0.02%	(0.02%)
Cash & Equivalents	1%	1%	0.04%	0.05%	(0.00%)	0.02%	0.02%
Total			**10.17%** =	**8.77%** +	**1.27%** +	**0.13%**	**1.40%**

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% MSCI World Index, 12.0% Barclays Aggregate Index, 11.8% MSCI EAFE Index, 10.0% NCREIF Total Index, 5.0% CPI-W, 5.0% Barclays HY Corp 2% Issue, 5.0% NDSIB TFFR - Private Equity, 5.0% Barclays Global Agg ex US, 5.0% NCREIF Timberland Index, 4.8% Russell 2000 Index, 2.8% Emerging Mkts - Net and 1.0% 3-month Treasury Bill.

One Year Manager Selection within Real Estate, Infrastructure, Fixed Income and Domestic and International Equity was a positive contributor to relative performance, while Timber and World Equity were detractors.

Unaudited amounts subject to change

Source: Callan, gross returns

TFFR Total Fund Attribution
Three Years Ended September 30, 2014

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	25%	24%	23.98%	22.83%	0.25%	0.16%	0.42%
Domestic Fixed Income	17%	17%	7.26%	4.94%	0.41%	(0.01%)	0.41%
Real Estate	10%	10%	13.40%	11.08%	0.23%	(0.04%)	0.19%
Timber	5%	5%	(0.46%)	7.37%	(0.43%)	0.02%	(0.40%)
Infrastructure	4%	5%	8.98%	1.54%	0.30%	0.21%	0.50%
International Equity	17%	16%	13.58%	12.46%	0.16%	(0.01%)	0.15%
International Fixed Incom	5%	5%	3.09%	0.14%	0.17%	(0.02%)	0.15%
Private Equity	6%	5%	5.65%	5.65%	0.00%	(0.06%)	(0.06%)
World Equity	11%	11%	-	-	0.03%	(0.07%)	(0.04%)
Cash & Equivalents	1%	1%	0.06%	0.07%	(0.00%)	0.00%	0.00%
Total			**13.68%**	**= 12.37%**	**+ 1.13%**	**+ 0.18%**	**1.32%**

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% MSCI World Index, 12.0% Barclays Aggregate Index, 11.8% MSCI EAFE Index, 10.0% NCREIF Total Index, 5.0% CPI-W, 5.0% Barclays HY Corp 2% Issue, 5.0% NDSIB TFFR - Private Equity, 5.0% Barclays Global Agg ex US, 5.0% NCREIF Timberland Index, 4.8% Russell 2000 Index, 2.8% Emerging Mkts - Net and 1.0% 3-month Treasury Bill.

Three Year Manager Selection within Fixed Income, Infrastructure, Equity and Real Estate was a positive contributor to relative performance, while Timber was the sole detractor. *Unaudited amounts subject to change*

Source: Callan, gross returns

Note: Timber, Infrastructure and World Equity did not have distinct Target Returns in prior years.

TFFR Total Fund Attribution
Four and One-Quarter Years Ended September 30, 2014

Four and One-Quarter Year Annualized Relative Attribution Effects

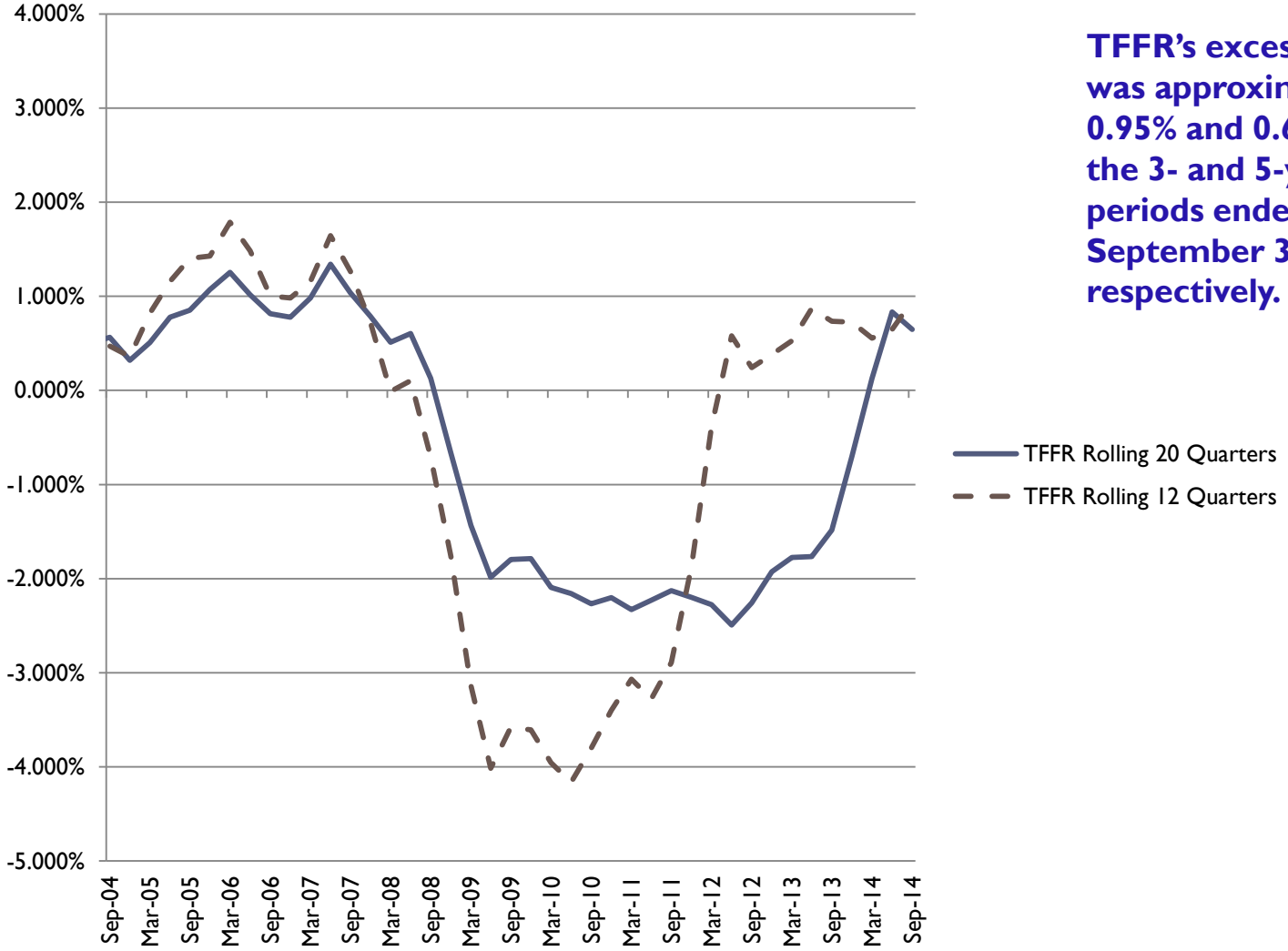
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	29%	28%	18.94%	18.56%	0.03%	0.12%	0.15%
Domestic Fixed Income	18%	18%	7.08%	5.40%	0.29%	(0.03%)	0.26%
Real Estate	10%	10%	15.69%	12.55%	0.29%	0.04%	0.33%
Timber	4%	4%	-	-	(0.30%)	0.02%	(0.28%)
Infrastructure	3%	4%	-	-	0.21%	0.14%	0.35%
International Equity	19%	18%	10.68%	8.66%	0.41%	(0.02%)	0.39%
International Fixed Incom	5%	5%	5.94%	3.35%	0.14%	(0.01%)	0.13%
Private Equity	5%	5%	7.56%	7.56%	0.00%	(0.07%)	(0.07%)
World Equity	8%	8%	-	-	0.02%	(0.05%)	(0.03%)
Cash & Equivalents	1%	1%	0.09%	0.09%	0.00%	(0.02%)	(0.02%)
Total			**12.15%**	**= 10.93%**	**+ 1.09%**	**+ 0.12%**	**1.22%**

* Current Quarter Target = 16.6% Russell 1000 Index, 16.0% MSCI World Index, 12.0% Barclays Aggregate Index, 11.8% MSCI EAFE Index, 10.0% NCREIF Total Index, 5.0% CPI-W, 5.0% Barclays HY Corp 2% Issue, 5.0% NDSIB TFFR - Private Equity, 5.0% Barclays Global Agg ex US, 5.0% NCREIF Timberland Index, 4.8% Russell 2000 Index, 2.8% Emerging Mkts - Net and 1.0% 3-month Treasury Bill.

Four-1/4 Year Manager Selection within International Equity, Fixed Income, Real Estate and Infrastructure was a positive contributor to relative performance, while Timber was the sole detractor. *Unaudited amounts subject to change*

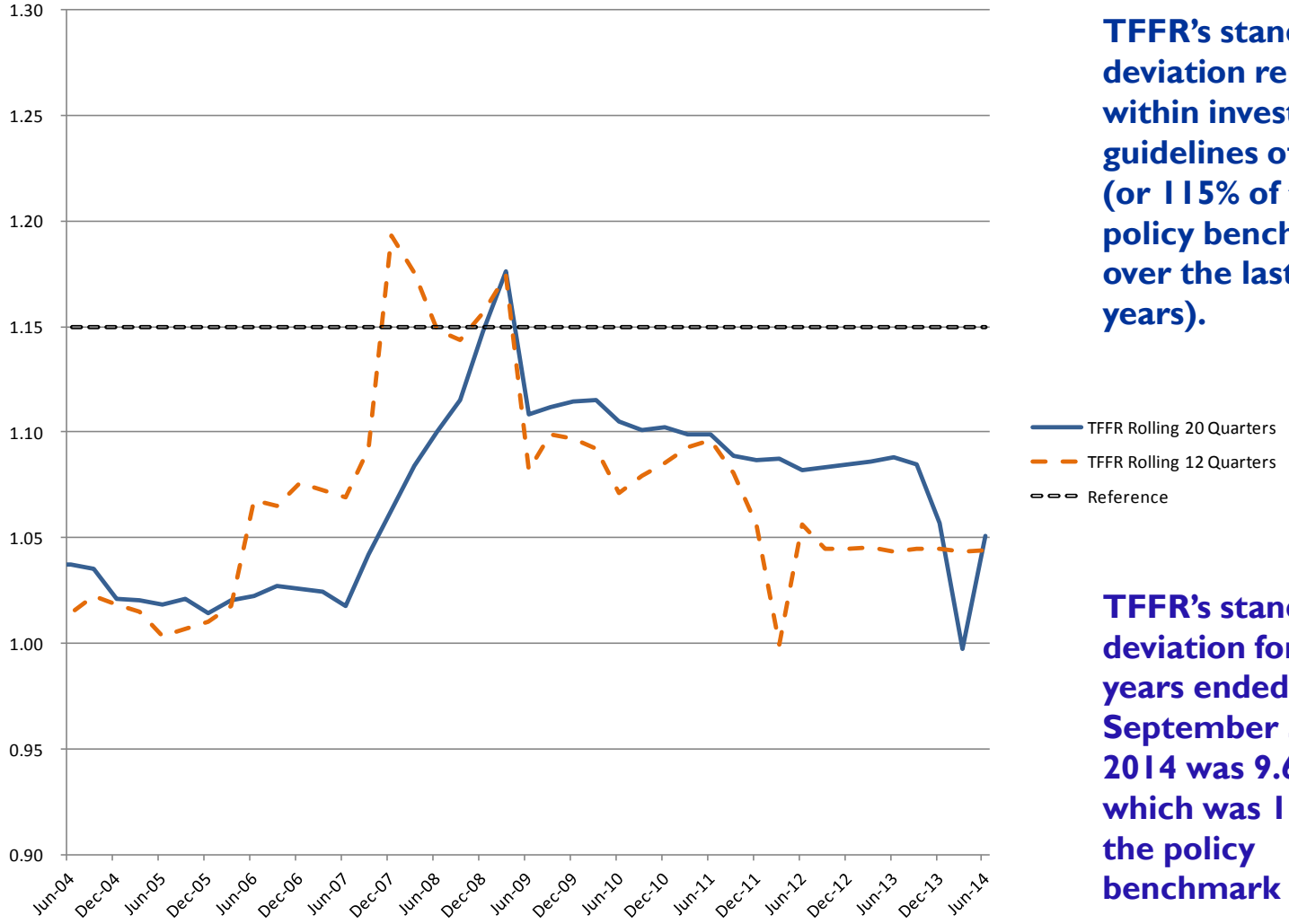
Source: Callan, gross returns *Note: Timber, Infrastructure and World Equity did not have distinct Target Returns in prior years.*

Excess Return Relative to Policy Benchmark
10 Years Ended 9/30/2014



TFFR's excess return was approximately 0.95% and 0.65% for the 3- and 5-year periods ended September 30, 2014, respectively.

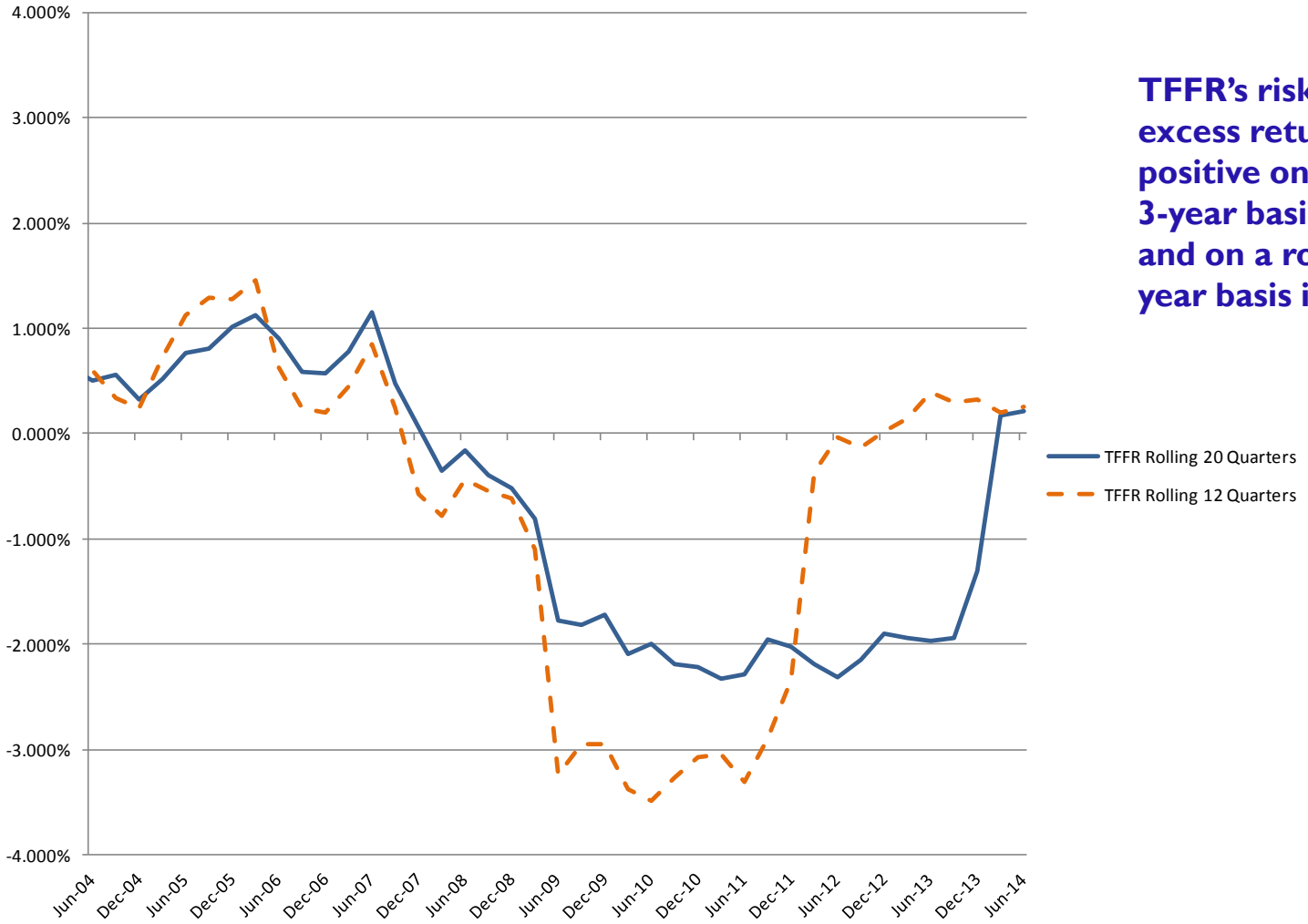
Relative Standard Deviation Relative to Policy Benchmark
10 Years Ended 9/30/2014



TFFR's 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 September 30, 2014 was 9.6%, which was 104% of the policy benchmark of 9.2%.

Risk Adjusted Excess Return
10 Years Ended 9/30/2014



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

ND STATE INVESTMENT BOARD MEETING

Friday, January 23, 2015, 8:30 a.m.
Workforce Safety & Insurance
1600 East Century Ave, Bismarck, ND

AGENDA

I. CALL TO ORDER AND ACCEPTANCE OF AGENDA

II. ACCEPTANCE OF MINUTES (November 21, 2014)

III. APPOINTMENT OF PARLIAMENTARIAN

IV. INVESTMENTS

A. Asset and Investment Overview - Mr. Hunter (enclosed) (5 min)
B. Novarca and Callan Fee Study Update - Mr. Hunter (enclosed) (5 min) **Board Action**
C. Infrastructure Update - Mr. Schulz (enclosed) (5 min)

V. ADMINISTRATION

A. 2015-16 Board Meeting Schedule - Mr. Hunter (enclosed) (5 min) **Board Action**
B. Executive Review & Survey Update - Mr. Hunter (enclosed) (10 min) **Board Action**

VI. QUARTERLY MONITORING (enclosed) (15 min) **Board Acceptance**

A. Budget and Financial Condition - Ms. Flanagan
B. Executive Limitations / Staff Relations - Mr. Hunter
C. Investment Program - Mr. Schulz
D. Retirement Program - Ms. Kopp
E. Watch List Update - Mr. Schulz

VII. GOVERNANCE

A. Legislative Update - Mr. Hunter (10 min)
B. Investment Policy Statements - Mr. Hunter (enclosed) (10 min) **Board Acceptance**
C. Potential New SIB Clients - Mr. Hunter (enclosed) (10 min) **Board Approval**

========== BREAK ==========

D. Governance Process Review - Mr. Hunter (enclosed) (30 min)
E. Open Records and Open Meetings Education - Ms. Murtha (to follow) (30 min)

VIII. OTHER

Next Meetings: SIB meeting - February 27, 2015, 8:30 a.m. - Workforce Safety & Insurance
SIB Audit Committee meeting - February 27, 2015, 1:00 p.m. - Workforce Safety & Insurance

IX. ADJOURNMENT

Any individual requiring an auxiliary aid or service, please contact the Retirement and Investment Office
(701) 328-9885 at least three (3) days prior to the scheduled meeting.

NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
SEPTEMBER 26, 2014, BOARD MEETING

MEMBERS PRESENT:
Drew Wrigley, Lt. Governor, Chair
Mike Sandal, Vice Chair
Clarence Corneil, Parliamentarian, TFFR Board
Lance Gaebe, Land Commissioner
Mike Gessner, TFFR Board
Rob Lech, TFFR Board
Kelly Schmidt, State Treasurer
Yvonne Smith, PERS Board
Cindy Ternes, WSI designee
Tom Trenbeath, PERS Board

BOARD MEMBERS ABSENT: Adam Hamm, Insurance Commissioner

STAFF PRESENT:
Connie Flanagan, Fiscal & Invt Op Mgr
Bonnie Heit, Assist to the SIB
David Hunter, ED/CIO
Fay Kopp, Dep. ED/CRO
Cody Schmidt, Compliance Officer
Darren Schulz, Dep. CIO
Susan Walcker, Invt Acct

OTHERS PRESENT:
Jeff Engleson, Land Dept.
Eric Hardmeyer, BND
Bob Humann, BND
Mel Olson, TFFR Board
Jan Murtha, Attorney General's Office
Bryan Reinhardt, PERS

CALL TO ORDER:

Lt. Governor Wrigley called the State Investment Board (SIB) meeting to order at 8:34 a.m. on Friday, September 26, 2014, at the Peace Garden Room, State Capitol, Bismarck, ND.

Commissioner Hamm was absent attending a National Association of Insurance Commissioners meeting where he serves as President.

AGENDA:

IT WAS MOVED BY MR. SANDAL AND SECONDED BY MR. GESSNER AND CARRIED ON A VOICE VOTE TO ACCEPT THE AGENDA FOR THE SEPTEMBER 26, 2014, MEETING AS DISTRIBUTED.

AYES: TREASURER SCHMIDT, MR. GESSNER, MS. TERNES, COMMISSIONER GAEBE, MS. SMITH, MR. LECH, MR. SANDAL, MR. TRENBEATH, MR. CORNEIL, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER HAMM

MINUTES:

IT WAS MOVED BY MR. GESSNER AND SECONDED BY MS. TERNES AND CARRIED ON A VOICE VOTE TO APPROVE THE AUGUST 22, 2014, MINUTES AS DISTRIBUTED.

AYES: MS. SMITH, MR. SANDAL, MR. CORNEIL, MR. GESSNER, MR. LECH, MR. TRENBEATH, MS. TERNES, COMMISSIONER GAEBE, TREASURER SCHMIDT, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER HAMM

INVESTMENT MANAGEMENT FEES AND EXPENSES:

Mr. Hunter provided fee and assets under management (AUM) comparisons for Fiscal Years ending 2013 and 2014. For the Fiscal Years 2013 and 2014, fees/expenses were $44,703,232 and $43,233,477 and AUM $6,905,312,561 and $8,632,237,726, respectively.

Between Fiscal Years 2013 and 2014 the investment management fees and expenses for the Pension Trust (as a percent of average assets under management) declined by 14% or 11 basis points while the Insurance Trust declined by 31% or 13 basis points.

CALLAN CUSTODY AND FEE REVIEW:

Staff met with Callan representatives on September 22, 2014, and reviewed preliminary results of the custody and fee study of The Northern Trust. Results indicate the services provided by The Northern Trust are adequate and timely and are in line with other major trust providers. Callan representatives will present the results of the study at a future SIB meeting.

On April 1, 2014, The Northern Trust reduced their fees which is estimated to bring over $600,000 in annual savings; $340,000 for the Pension Trust and $260,000 for the Insurance Trust clients.

Mr. Hunter reviewed strategic initiatives as of September 26, 2014. Discussion was held on the Carver Governance Model and if the SIB should continue with the Carver Model or explore other alternatives. Mr. Hunter and several board members felt overall the model has worked well for the SIB and felt the SIB should continue with the model. Mr. Hunter indicated he has made tentative arrangements with Carver representatives to review the Carver Governance Model at the November 21, 2014, board meeting.

The SIB also discussed scheduling an annual retreat preferably after the legislative session. Staff will look into making those arrangements and report back to the board.

BANK OF NORTH DAKOTA (BND):

BND representatives Mr. Hardmeyer and Mr. Humann reviewed the BND and SIB Match Loan Program relationship. To date, the SIB has committed $200 million (on a revolving basis) to the program. The BND is requesting an additional commitment of $100 million from the SIB along with a 10 year fixed rate option instead of

the current 5 year fixed rate option. The BND is aware of several large projects that could request a total of $120 million in funding.

After discussion, the SIB directed staff to conduct an analysis of the SIB's current funding source to the program and report back to the board. The SIB currently funds the program through the Budget Stabilization Fund and staff felt other or better alternatives should be explored.

The Board recessed at 9:50 a.m. and reconvened at 10:03 a.m.

Mr. Trenbeath was absent.

GOVERNANCE REVIEW:

Mr. Hunter reviewed the SIB's Carver Governance Policy Manual and also reviewed first readings of suggested amendments to policies.

Lt. Governor Wrigley left the meeting at 11:15 a.m. and Mr. Sandal officiated over the remainder of the meeting.

Under review of Board-Staff Relationship/Monitoring Executive Performance, Mr. Hunter distributed a draft of a Summary of Executive Governance Policy Monitoring. The Audit Supervisor, once on board, will be responsible for monitoring the Executive Director's adherence to governance policies and will present those findings to the SIB Audit Committee. Once reviewed by the SIB Audit Committee, the summary will then be made available to the SIB as part of the formal evaluation of the Executive Director in February 2015.

The SIB requested legal council to provide clarification on the following sections of the bylaws and report back to the board:

Chapter 2, Board, Section 2-3; When the statutes allow a Deputy to represent a member of the SIB or an alternate to represent the TFFR or PERS Board, the Chair will recognize the individual for the record, and the individuals (s) will then have the right to vote on matters before the SIB.

Chapter 5, Committees, Section 5-2; No member of the SIB will be paid, other than expenses, for attending seminars, conferences, or other such educational meetings.

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. LECH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE FIRST READING OF AMENDMENTS TO THE GOVERNANCE POLICIES.

AYES: TREASURER SCHMIDT, MR. CORNEIL, COMMISSIONER GAEBE, MR. LECH, MR. SANDAL, MR. GESSNER, MS. SMITH, AND MS. TERNES
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER HAMM, MR. TRENBEATH, LT. GOVERNOR WRIGLEY

Mr. Hunter will submit the amended policies for a second reading and adoption at the October 24, 2014, meeting. Policy amendments are retained at RIO for 30 years per state guidelines.

BUDGET REVIEW:

Ms. Flanagan reviewed the status of RIO's budget as of June 30, 2014, for the 2013-15 biennium and the budget request for the 2015-17 biennium.

IT WAS MOVED BY MR. GESSNER AND SECONDED BY MR. LECH AND CARRIED ON A VOICE VOTE TO ACCEPT THE BUDGET REPORT.

AYES: MS. TERNES, MR. CORNEIL, TREASURER SCHMIDT, COMMISSIONER GAEBE, MR. LECH, MR. SANDAL, MS. SMITH, AND MR. GESSNER
NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER HAMM, MR. TRENBEATH, LT. GOVERNOR WRIGLEY

STAFFING UPDATE:

Mr. Hunter stated the Audit Supervisor position is expected to be filled on October 13, 2014, and the Investment Analyst position is expected to be filled by November 30, 2014.

EXECUTIVE REVIEW COMMITTEE:

Mr. Lech stated the Executive Review Committee met on September 18, 2014, with Mr. Hunter and reviewed the evaluation process, governance policies as they relate to the Executive Director's annual evaluation, and a draft of Mr. Hunter's annual goals.

The Executive Review Committee, Mr. Lech, Chair, Mr. Sandal, and Ms. Ternes felt the Committee completed its tasks and unless the SIB determined otherwise, the Committee is considered resolved.

Mr. Lech stated he will however administer the executive assessment survey to the SIB and compile the results at the appropriate timeframes. He would also be willing to serve on the next cycle of the Executive Review Committee when the Chair appoints that Committee.

GFOA CERTIFICATE:

Mr. Hunter informed the SIB the Government Finance Officers Association has awarded a Certificate of Achievement for Excellence in Financial Reporting to RIO for the 16th consecutive year. Mr. Hunter and the SIB recognized and thanked the fiscal management staff for their outstanding performance.

OTHER:

Mr. Hunter informed the board PIMCO co-founder and Chief Investment Officer, Mr. Bill Gross, resigned from PIMCO September 26, 2014, and will join Janus Capital Group on September 29, 2014. Mr. Hunter stated a meeting had previously been scheduled with the SIB's PIMCO relationship team to review the SIB's mandates on Thursday, October 2, 2014, at 10:00 am, at RIO and that the departure of Mr. Gross will also be addressed. Mr. Hunter stated all board members are welcome to attend and that he will provide an update at the October 24, 2014, meeting.

Next SIB Meeting – October 24, 2014, 8:30 a.m. - State Capitol, Peace Garden Room
Next SIB Audit Committee meeting – October 24, 2014, 1:00 p.m. - State Capitol, Peace Garden Room

ADJOURNMENT:

With no further business to come before the SIB, Mr. Sandal adjourned the meeting at 11:45 a.m.

_____
Lt. Governor Wrigley, Chair
State Investment Board

_____
Bonnie Heit
Assistant to the Board

NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
OCTOBER 24, 2014, BOARD MEETING

MEMBERS PRESENT:

Drew Wrigley, Lt. Governor, Chair
Mike Sandal, Vice Chair
Clarence Corneil, Parliamentarian, TFFR Board
Lance Gaebe, Land Commissioner
Mike Gessner, TFFR Board
Adam Hamm, Insurance Commissioner (TLCF)
Rob Lech, TFFR Board
Kelly Schmidt, State Treasurer
Yvonne Smith, PERS Board
Cindy Ternes, WSI designee
Tom Trenbeath, PERS Board

STAFF PRESENT:

Terra Miller-Bowley, Supvr Audit Services
Connie Flanagan, Fiscal & Invt Op Mgr
Bonnie Heit, Assist to the SIB
David Hunter, ED/CIO
Cody Schmidt, Compliance Officer
Susan Walcker, Invt Acct

OTHERS PRESENT:

Bo Abesamis III, Callan
Eric Hardmeyer, BND
Mark Kinoshita, Callan
Bryan Klipfel, WSI
Jan Murtha, Attorney General's Office
Tim Porter, BND
Bill Priest, Epoch
Jeff Ulness, Epoch

CALL TO ORDER:

Lt. Governor Wrigley called the State Investment Board (SIB) meeting to order at 8:30 a.m. on Friday, October 24, 2014, at the Peace Garden Room, State Capitol, Bismarck, ND.

AGENDA:

IT WAS MOVED BY MR. LECH AND SECONDED BY MR. GESSNER AND CARRIED ON A VOICE VOTE TO ACCEPT THE AGENDA FOR THE OCTOBER 24, 2014, MEETING AS DISTRIBUTED.

AYES: MS. TERNES, MR. CORNEIL, COMMISSIONER HAMM, TREASURER SCHMIDT, MR. TRENBEATH, MR. LECH, MR. SANDAL, MS. SMITH, MR. GESSNER, AND LT. GOVERNOR

NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER GAEBE

MINUTES:

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. CORNEIL AND CARRIED ON A VOICE VOTE TO APPROVE THE SEPTEMBER 26, 2014, MINUTES AS DISTRIBUTED.

AYES: COMMISSIONER HAMM, MS. TERNES, MR. CORNEIL, MR. SANDAL, TREASURER SCHMIDT, MR. GESSNER, MS. SMITH, MR. LECH, MR. TRENBEATH, AND LT. GOVERNOR WRIGLEY

NAYS: NONE
MOTION CARRIED
ABSENT: COMMISSIONER GAEBE

EPOCH:

Mr. Priest provided an update on Epoch Investment Partners, the firm's investment philosophy/process, capital markets, and also reviewed the SIB's global equity strategy mandate.

BANK OF ND (BND):

Mr. Hunter and Mr. Hardmeyer reviewed a revised Match Loan CD Program (Program) proposal from the BND. The BND is amending their request for an increase in commitment from $300 million to $250 million (currently at $200 million on a revolving basis) and eliminating the fixed rate term extension request. The BND initially proposed lengthening the fixed interest rate term from 5 years to 10 years.

Staff recommended and the SIB concurred to not increase the Program's size at this time given the interest rate earned on the investment is based on fixed rate U.S. treasury notes which have declined significantly in 2014. Staff will continue to monitor the Program because it has been successful since it was first implemented in 1992. In the event interest rates were to change significantly in the future, staff will reassess the Program size and its risk, return, and liquidity profile within the overall Budget Stabilization Fund investment portfolio.

Discussion was held on other options for funding the Program besides the Budget Stabilization Fund. At this time, the SIB does not have an existing client that would work with the Program's overall minimum expected return of less than 2 percent.

Discussion was also held on whether the Legacy Fund would be a better option to fund a long term investment for the Program. Mr. Hunter will be meeting with the Legacy and Budget Stabilization Fund Advisory Board on October 28, 2014, and will address this issue with them and will follow-up with the SIB.

The SIB recessed at 9:58 a.m. and reconvened at 10:11 a.m.

CALLAN CUSTODY REVIEW:

Callan representatives reviewed the results of the custody and fee study of The Northern Trust Company (TNT). The results indicate the services provided by TNT are sufficient and responsive to RIO and the SIB's trust requirements. Results also indicated the fee structure is comparable to other custody providers. Callan compared TNT to the top four custody providers and recommended the SIB maintain the current service structure and fee arrangement.

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. SANDAL AND CARRIED ON A VOICE VOTE TO ACCEPT THE CALLAN CUSTODY AND FEE REVIEW.

AYES: TREASURER SCHMIDT, MR. CORNEIL, COMMISSIONER GAEBE, MR. TRENBEATH, MR. SANDAL, COMMISSIONER HAMM, MR. GESSNER, MS. SMITH, MS. TERNES, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: MR. LECH

CALLAN SECURITIES LENDING REVIEW:

Mr. Abesamis reviewed the components of securities lending in today's economy and how it is deployed around the world.

Callan also completed a study of TNT securities lending options and Mr. Abesamis reviewed the proposals available to the SIB if they would choose to implement a securities lending program. Callan recommended the SIB implement the common industry approach which is an 80/20 split as long as the program structure is an overnight intrinsic indemnified US Treasury REPO with the commensurate indemnity for operational and borrower default risk. TNT representatives will be at the SIB's November 21, 2014, meeting to review the proposal.

GOVERNANCE POLICY AMENDMENT:

The SIB received a second reading of the Governance Policy amendments previously reviewed at the September 26, 2014, meeting. Staff requested board acceptance.

IT WAS MOVED MS. TERNES AND SECONDED BY MR. CORNEIL AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE GOVERNANCE POLICY REVISIONS.

AYES: COMMISSIONER HAMM, MS. TERNES, COMMISSIONER GAEBE, MR. GESSNER, MS. SMITH, MR. TRENBEATH, MR. SANDAL, MR. CORNEIL, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: MR. LECH, TREASURER SCHMIDT

ED/CIO ANNUAL GOALS:

Mr. Hunter distributed a summary of his annual goals. These goals were previously reviewed by the Executive Review Committee and are aligned with Governance Policy.

The SIB also received a summary of the responses to the SIB client satisfaction survey for the period of July 1, 2013 through June 30, 2014. The SIB's clients rated the SIB's service as excellent or above average in all categories.

QUARTERLY MONITORING:

The following Executive Director/CIO governance policy monitoring reports for the quarter ending September 30, 2014, were presented for consideration; Executive Limitations/Staff Relations, Budget/Financial Conditions, Investment Program, and Retirement Program.

Mr. Hunter introduced Ms. Terra Miller-Bowley. Ms. Miller-Bowley began her duties as RIO's Supervisor of Audit Services effective October 13, 2014.

IT WAS MOVED BY MR. SANDAL AND SECONDED BY MS. SMITH AND CARRIED ON A VOICE VOTE TO ADOPT THE SEPTEMBER 30, 2014, GOVERNANCE POLICY MONITORING REPORTS.

AYES: MR. GESSNER, COMMISSIONER GAEBE, MS. SMITH, COMMISSIONER HAMM, MR. CORNEIL, MR. TRENBEATH, MR. SANDAL, MS. TERNES, AND LT. GOVERNOR WRIGLEY
NAYS: NONE
MOTION CARRIED
ABSENT: MR. LECH, TREASURER SCHMIDT

Mr. Hunter commented on PIMCO who is currently on the Watch List due to the recent departure of Mr. Gross and other senior personnel. Staff continues to closely monitor the SIB's mandates with PIMCO. Mr. Hunter indicated he and Mr. Schulz will be conducting an on-site visit with the SIB's PIMCO team on November 6, 2014, and will follow-up with the board.

OTHER:

Next scheduled meetings:

SIB Meeting - November 21, 2014, 8:30 a.m. - State Capitol, Brynhild Haugland Room
SIB Audit Committee meeting - October 24, 2014, 1:00 p.m. - State Capitol, Brynhild Haugland Room

ADJOURNMENT:

With no further business to come before the SIB, Lt. Governor Wrigley adjourned the meeting at 11:[illegible] a.m.

Lt. Governor Wrigley, Chair
State Investment Board

Bonnie Heit
Assistant to the Board

NORTH DAKOTA STATE INVESTMENT BOARD
MINUTES OF THE
NOVEMBER 21, 2014, BOARD MEETING

MEMBERS PRESENT:
Mike Sandal, Vice Chair
Clarence Corneil, Parliamentarian, TFFR Board
Lance Gaebe, Land Commissioner
Mike Gessner, TFFR Board
Adam Hamm, Insurance Commissioner (TLCF)
Rob Lech, TFFR Board
Kelly Schmidt, State Treasurer
Yvonne Smith, PERS Board
Cindy Ternes, WSI designee
Tom Trenbeath, PERS Board

MEMBERS ABSENT:
Drew Wrigley, Lt. Governor, Chair

STAFF PRESENT:
Terra Miller-Bowley, Supvr Audit Services
Eric Chin, Investment Analyst
Connie Flanagan, Fiscal & Invt Op Mgr
Bonnie Heit, Assist to the SIB
David Hunter, ED/CIO
Fay Kopp, Deputy ED/CRO
Cody Schmidt, Compliance Officer
Darren Schulz, Deputy CIO
Susan Walcker, Invt Acct

OTHERS PRESENT:
Donald Anderson, Northern Trust
Vikram Bhaskar, Grosvenor
Elliott Donnelley, Novarca
Jeff Engleson, Land Dept.
Levi Erdmann, Land Dept.
Paul Erlendson, Callan Associates
Ashby Monk, Novarca
Patricia Somerville-Koulouris, Northern Trust
Claire Ness, Attorney General's Office
Tim Porter, BND
Bryan Reinhardt, PERS
Michael Rose, Grosvenor
Ed Schafer, former Governor of ND
Marcel Staub, Novarca
Thomas Welsh, Novarca

CALL TO ORDER:

Mr. Sandal called the State Investment Board (SIB) meeting to order at 8:30 a.m. on Friday, November 21, 2014, at the Brynhild Haugland Room, State Capitol, Bismarck, ND.

AGENDA:

IT WAS MOVED BY MS. TERNES AND SECONDED BY MR. GESSNER AND CARRIED ON A VOICE VOTE TO ACCEPT THE AGENDA FOR THE NOVEMBER 21, 2014, MEETING AS DISTRIBUTED.

AYES: COMMISSIONER GAEBE, TREASURER SCHMIDT, MR. SANDAL, COMMISSIONER HAMM, MR. CORNEIL, MS. TERNES, MR. GESSNER, MR. TRENBEATH, MR. LECH, AND MS. SMITH

NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

MINUTES:

IT WAS MOVED BY MR. TRENBEATH AND SECONDED BY MR. CORNEIL AND CARRIED ON A VOICE VOTE TO APPROVE THE OCTOBER 24, 2014, MINUTES AS DISTRIBUTED.

AYES: MR. GESSNER, COMMISSIONER GAEBE, MS. SMITH, MS. TERNES, TREASURER SCHMIDT, MR. LECH, COMMISSIONER HAMM, MR. CORNEIL, MR.TRENBEATH, AND MR. SANDAL
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

INVESTMENTS:

Asset/Performance Review – Mr. Hunter updated the SIB on the assets they manage on behalf of their clients as of September 30, 2014. Assets under management grew by approximately 19 percent or $1.53 billion in the last year. The Pension Trust posted a net return of over 9.8 percent with gains of $416 million. The Insurance Trust generated a net return of 5.3 percent with gains of $198 million. The Legacy Fund's net return was 3.8 percent and increased by $1.1 billion during the last 12 months. SIB client assets approximated $9.6 billion at September 30, 2014, based on unaudited valuations.

Novarca Fee Study – Novarca representatives reviewed their background which is to assist pension funds, endowments, and foundations reduce/recoup excess fees paid to the financial industry. Novarca reviews portfolios, identifies areas for improvement, optimizes the cost structures, and monitors the savings. The firm reduces/recoups costs by striving to optimize the cost structures within the existing allocation and within the existing roster of investment managers, brokers, and custodians. The firm works on contingency and there are no upfront costs. The firm invoices only if and when savings are realized and fees come from what would have been paid to the financial industry. Staff recommended the SIB contract with Novarca to perform a comprehensive review of only the private equity strategies at this time.

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. LECH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF RECOMMENDATION AND PROCEED WITH LEGAL COUNCIL THE NEGOTIATION OF LEGAL DOCOMENTATION TO INCLUDE A CONTINGENT FEE STRUCTURE AND STRICT TERMS OF CONFIDENTIALITY WITH NOVARCA.

AYES: MS. SMITH, COMMISSIONER HAMM, MR. GESSNER, COMMISSIONER GAEBE, MR. TRENBEATH, MR. CORNEIL, MR. SANDAL, TREASURER SCHMIDT, MS. TERNES, AND MR. LECH
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

Callan Fee Study – Mr. Erlendson reviewed the results of Callan's fee study for fiscal year ending June 30, 2014. The fee study indicated results are favorable but there are areas where additional savings could be realized.

Mr. Hunter stated there are additional fee savings that will be reflected in the next fiscal year that have not yet taken affect which should improve the fee analysis.

IT WAS MOVED BY MR. GESSNER AND SECONDED BY MS. TERNES AND CARRIED BY A ROLL CALL VOTE TO ACCEPT CALLAN'S FEE STUDY REPORT.

AYES: TREASURER SCHMIDT, MR. GESSNER, COMMISSIONER HAMM, MS. TERNES, COMMISSIONER GAEBE, MS. SMITH, MR. LECH, MR. SANDAL, MR. TRENBEATH, AND MR. CORNEIL
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

Northern Trust Securities Lending – Representatives of Northern Trust reviewed the firm's security lending program and the steps which would need to be taken to implement a program for the SIB. Staff recommended the SIB approve implementation of the securities lending program as outlined by Northern Trust. Callan representatives reviewed securities lending options with the SIB at their October 24, 2014, meeting and recommended the SIB implement the common industry approach which is an 80/20 split as long as the program structure is an overnight intrinsic indemnified US Treasury REPO with the commensurate indemnity for operational and borrower default risk.

IT WAS MOVED BY COMMISSIONER GAEBE AND SECONDED BY MS. SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF RECOMMENDATION TO MOVE FORWARD WITH THE LEGAL AGREEMENT PROCESS FOR THE NORTHERN TRUST SECURITIES LENDNG PROGRAM.

AYES: MS. SMITH, MR. SANDAL, MR. CORNEIL, MR. GESSNER, MR. LECH, MR. TRENBEATH, MS. TERNES, COMMISSIONER HAMM, COMMISSIONER GAEBE, AND TREASURER SCHMIDT.
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

Legacy & Budget Stabilization Fund Advisory Board – Mr. Hunter stated he met with the Legacy and Budget Stabilization Fund Advisory Board (LBSFAB) on October 28, 2014, and provided an investment update on the Legacy Fund and the Budget Stabilization Fund as of August 31, 2014. Mr. Hunter also reviewed the investment policy statements for both funds and also reviewed the Bank of North Dakota (BND) Match Loan CD Program and discussed the BND's request to increase the size of the Match Loan CD Program within the Budget Stabilization Fund. Mr. Hunter stated the LBSFAB recommended the SIB consider making available an additional $50 million from the Budget Stabilization Fund for investment in the BND Match Loan CD Program. The LBSFAB also requested the Budget Stabilization Fund investment policy statement be reviewed by RIO to identify any possible provisions which may be in conflict with the recommendation. Following a review by legal counsel, two formats were composed in relation to the BND proposal. Mr. Hunter indicated both options are reasonable given the Legislative Council has stated the Budget Stabilization Fund is projected to increase by $133 million in the next biennium. He also indicated the $50 million increase is then deemed reasonable from a liquidity perspective as it will allow the three existing managers within the Budget Stabilization Fund (Babson Capital, JP Morgan, and the BND) to each represent approximately one-third share of the overall investment allocation.

The SIB took no action on the matter as the SIB's policy is to have investment policy statements approved by their respective clients prior to the SIB's consideration and implementation.

The next meeting of the LBSFAB has been scheduled for December 1, 2014, and Mr. Hunter will report back to the SIB, at their January 23, 2015, meeting.

The SIB recessed at 10:30 a.m. and reconvened at 10:37 a.m.

Grosvenor Infrastructure – Grosvenor representatives provided an update on their firm and personnel since Credit Suisse sold its Customized Fund Investment Group business unit to Grosvenor Capital Management in early January 2014.

Representatives also reviewed the Customized Infrastructure Strategies II Fund which they are currently seeking commitments. Staff recommended committing assets up to $30 million of the Pension Trust and up to $75 million of the Legacy Fund.

IT WAS MOVED BY MR. GESSNER AND SECONDED BY MR. TRENBEATH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT STAFF RECOMMENDATION AND COMMIT UP TO $30 MILLION OF THE PENSION TRUST ASSETS AND UP TO $75 MILLION OF THE LEGACY FUND ASSETS TO GCM GROSVENOR CUSTOMIZED INFRASTRUCTURE STRATEGIES II FUND SUBJECT TO SUCCESSFUL CONTRACT NEGOTIATIONS.

AYES: MR. TRENBEATH, TREASURER SCHMIDT, MR. CORNEIL, COMMISSIONER GAEBE, MR. LECH, MR. SANDAL, COMMISSIONER HAMM, MR. GESSNER, MS. SMITH, AND MS. TERNES
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

MONITORING:

Callan Investment Review – Mr. Erlendson reviewed performance of the Pension Trust and the Insurance Trust for the quarter ending September 30, 2014.

IT WAS MOVED BY MR. TRENBEATH AND SECONDED BY MS. SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT CALLAN'S INVESTMENT MEASUREMENT SERVICE QUARTERLY REPORTS FOR THE PENSION TRUST AND INSURANCE TRUST FOR THE PERIOD ENDING SEPTEMBER 30, 2014.

AYES: MS. TERNES, MR. CORNEIL, COMMISSIONER HAMM, TREASURER SCHMIDT, COMMISSIONER GAEBE, MR. TRENBEATH, MR. LECH, MR. SANDAL, MS. SMITH, AND MR. GESSNER
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

GOVERNANCE:

Legislative Update – Mr. Hunter stated investment updates were given on the Budget Stabilization Fund and Legacy Fund for the period ending August 31, 2014, to the LBSFAB on October 28, 2014. Staff also presented to the Employee Benefits Program Committee on October 29, 2014, and provided an overview of the SIB program/process, assets under management, and fiscal year activity.

Audit Committee Report – Mr. Hunter and Mr. Gessner updated the SIB on the SIB Audit Committee's activities for the period of July 1, 2013 to June 30, 2014.

CliftonLarsonAllen completed their audit of RIO's financial statements for the fiscal year ended June 30, 2014, and have issued an unmodified, clean, opinion.

Ms. Miller-Bowley updated the SIB on the preliminary review of the Executive Director/CIO's level of compliance with SIB Governance Manual Executive Limitations Policies A-1 through A-11. Ms. Miller-Bowley stated Audit Services is satisfied with the Executive Director/CIO's compliance at this time and a full Executive Limitations audit is scheduled to begin in January 2015.

Mr. Gessner stated Ms. Karol Riedman has replaced Mr. Lonny Mertz on the Audit Committee. Ms. Riedman is the Chief Audit Executive for the Office of Internal Audit of the ND Department of Health.

Mr. Gessner also stated the State Auditor's Office will issue a Request for Proposal on November 28, 2014, to solicit proposals from qualified CPA firms for the financial audit of the Retirement and Investment Office. CliftonLarsonAllen has been conducting the audit for the past three years.

Mr. Gessner also indicated GASB 67 and 68 statements are being implemented and there will be more information shared with the SIB on how these statements affect the school districts who report to Teachers' Fund for Retirement (TFFR).

Mr. Gessner thanked staff for all of their work on the financial audit report to achieve the positive results from CliftonLarsonAllen.

IT WAS MOVED BY TREASURER SCHMIDT AND SECONDED BY MR. LECH AND CARRIED BY A VOICE VOTE TO ACCEPT THE SIB AUDIT COMMITTEE ACTIVITIES REPORT WHICH ALSO INCLUDED RIO'S FINANCIAL AUDIT REPORT BY CLIFTONLARSONALLEN FOR THE FISCAL YEAR ENDED JUNE 30, 2014.

AYES: COMMISSIONER HAMM, MS. TERNES, MR. CORNEIL, MR. SANDAL, TREASURER SCHMIDT, MR. GESSNER, MS. SMITH, COMMISSIONER GAEBE, MR. LECH, AND MR. TRENBEATH
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

Investment Policy Statement Amendments – Mr. Hunter reviewed revised investment policy statements previously reviewed and approved by the clients for the Legacy Fund and the following PERS' Funds – PERS Main Plan, Job Service, Group Insurance Account, and Retiree Health Insurance Credit Fund.

IT WAS MOVED BY MR. CORNEIL AND SECONDED BY MS. SMITH AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE REVISED INVESTMENT POLICY STATEMENT FOR THE LEGACY FUND, AND THE FOLLOWING PERS' STATEMENTS – PERS MAIN PLAN, JOB SERVICE, GROUP INSURANCE, AND RETIREE HEALTH INSURANCE CREDIT FUND.

AYES: MR. LECH, TREASURER SCHMIDT, MR. CORNEIL, COMMISSIONER GAEBE, MR. TRENBEATH, MR. SANDAL, COMMISSIONER HAMM, MR. GESSNER, MS. SMITH, AND MS. TERNES
NAYS: NONE
MOTION CARRIED
ABSENT: LT. GOVERNOR WRIGLEY

PIMCO Update – Staff and SIB members – Treasurer Schmidt, Mr. Sandal, Ms. Smith, and Ms. Ternes met with PIMCO representatives on October 2, 2014, at the Retirement and Investment Office. Mr. Hunter and Mr. Schulz also conducted an on-site visit with PIMCO representatives at their headquarters in Newport Beach, CA. on November 6, 2014. Staff recommended that PIMCO remain on watch list status and also recommended no changes to existing mandates nor will they recommend PIMCO for any new mandates until they are comfortable with the internal changes at the firm.

The SIB concurred with staff recommendation and there was no action taken on the update.

Staff Update – Mr. Hunter introduced Mr. Eric Chin who joined the Retirement and Investment Office as an Investment Analyst effective November 10, 2014. Mr. Hunter stated the office is now fully staffed.

Mr. Corneil announced he has elected to resign from the Teachers' Fund for Retirement Board and the State Investment Board effective November 21, 2014. Mr. Corneil has been serving on the Teachers' Fund for Retirement Board since July 18, 2002, and the State Investment Board since September 17, 2004. Mr. Corneil thanked the leadership of RIO and the entire SIB and stated he has enjoyed serving the people of the State of North Dakota and will miss the educational elements that come with serving as a trustee. Mr. Sandal and the SIB thanked Mr. Corneil for his service and stated they will miss him.

OTHER:

Next scheduled meetings:

SIB Meeting – January 23, 2015, 8:30 a.m. – Workforce Safety & Insurance
SIB Audit Committee Meeting – February 27, 2015, 1:00 p.m. – Workforce Safety & Insurance

ADJOURNMENT:

With no further business to come before the SIB, Mr. Sandal adjourned the meeting at 12:25 p.m.

_____
Mr. Mike Sandal, Vice Chair
State Investment Board

_____
Bonnie Heit
Assistant to the Board

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp and Shelly Schumacher**

DATE: **January 15, 2015**

SUBJ: **GASB Update**

Much time and effort has been spent by staff from TFFR, PERS, and the State Auditor's Office over the past few months as we continued to develop plans for implementing the new GASB pension reporting standards and to educate employers and stakeholder groups.

- **GASB 67 and 68 Schedules and Required Information**

  Staff from TFFR and PERS worked closely with plan auditors, CliftonLarsonAllen (CLA) and plan actuary, Segal, on developing sample template note disclosures, required supplementary information, schedule of employer allocations, schedule of employer pension amounts, and other information necessary for TFFR financial statements (2014) and employer financial statements (2015). Segal provided the necessary GASB 67 information as part of the 2014 TFFR valuation report in October, and delivered GASB 68 information in November. Shelly will review Segal's GASB 68 report and sample template with the Board at the meeting (enclosed).

- **GASB 68 Employer and Auditor Training**

  As you know, TFFR and PERS hired Eric Berman, a governmental audit consultant from Eide Bailly, to provide employer and auditor training on the new GASB requirements. A pilot training session was held in June for a small working group of about 40 representatives of school districts, cities, counties, state, audit firms, and other interested stakeholders. Based on positive feedback from that training, we conducted GASB 68 training for all TFFR and PERS participating employers and auditors on December 11, 2014 at the Bismarck Events Center. In addition to Eric's presentation (enclosed) which provided a comprehensive overview of the new GASB reporting requirements, Shelly and Sharon also reviewed the GASB 68 employer financial statement information and template note disclosures, and Ron Tolstad from the State Auditor's Office reviewed information on census data audits. There was also a Q & A session with the

panel. About 110 individuals attended the training, and we again received very positive feedback. Additionally, the training was recorded, and is available on TFFR and PERS websites.

GASB 68 training will also be provided by Shelly at statewide business manager workshops this spring.

- **TFFR Website** http://www.nd.gov/rio/TFFR/Employers/default.htm

  The TFFR website now contains a wealth of GASB related information to inform employers, auditors, and the public about new GASB 68 reporting requirements. It includes a GASB overview, toolkit, implementation guide, AICPA white papers, GASB training presentation and video, GASB report from actuary, disclosure template, and frequently asked questions. We hope that these additional resources will assist employers and their auditors in understanding and implementing the new standards.

- **Employer Census Data Audits**

  In addition to auditing RIO's financial statements and checking GASB 67 information for our 2014 audit, TFFR's auditor, CliftonLarsonAllen (CLA), is also beginning to audit the demographic information received from employers that is included in the TFFR plan's valuation file and used to calculate the plan's net pension liability and pension expense. CLA selected a sample of 17 TFFR employers based on guidance from the AICPA. RIO's internal audit staff and Shelly contacted employers with TFFR's request to provide payroll information to CLA. CLA is conducting onsite audits at the 17 employers this month, and we expect to receive an audit opinion on the GASB schedules in February. Once we receive the audit opinion, we will notify employers and post the audited GASB report on the TFFR website which can then be used by employers for their 2015 financial statements.

I am very pleased with the work done by the GASB implementation planning team, with special appreciation to Shelly Schumacher and Connie Flanagan at RIO, Sharon Schiermeister and Sparb Collins at PERS, and Ron Tolstad at the State Auditor's Office. While there is more work ahead, much of the implementation planning and training is now completed. I anticipate we will be able to provide accurate and audited GASB information to TFFR employers on a timely basis. Then it's up to employers and their auditors to incorporate the information into their annual financial statements. It's a big job.

Enclosures

North Dakota Teachers' Fund for Retirement
North Dakota Public Employees Retirement System
North Dakota State Auditor's Office

GASB-68 Implementation Town Hall Meeting

December 2014

EideBailly®

CPAs & BUSINESS ADVISORS

A brief overview of the defined benefit pension provisions of GASB-68

EideBailly®

FINANCIAL SERVICES

Some Basic Definitions of Defined Benefit Plans – just an introduction

- **PERS and TFFR are <u>both</u> Cost Sharing Multiple – Employer Plans – what are they?**
  - A plan that includes more than one employer
  - Assets and liabilities are pooled
  - All assets are available to pay for all benefits
- Most common statewide plans nationwide

Overview of the New GASB Requirements

- GASB 67 replaced existing guidance for pension plans contained in GASB-25
  - Financial statements are similar presenting, assets, deferred outflows of resources, liabilities, deferred inflows of resources, plan net position, additions, deductions and changes in net position
  - Full set of notes on plan operations, investments, actuarial information.
  - Required supplementary information
  - Some cost-sharing multiple employer plans presenting additional supplementary information on allocations to employers – not required
  - Both TFFR and PERS have implemented GASB 67 successfully and timely

Overview of the New GASB Requirements

- GASB 68 provides for financial reporting by employers (replaces old GASB 27)
  - “Employers” are the entities making the contributions (e.g., State, Cities, Counties, School Districts, etc.)
- Net Pension Liability reported on each employer’s balance sheet and in each Plan’s notes to the financial statements
  - Entry age cost method calculates the liability using a blended discount rate
  - Offset by Market value of assets
- Accounting and financial reporting divorced from contribution requirements
- Annual pension expense (for employers) is essentially equal to change in Net Pension Liability during the year, with deferrals of certain items

Why the Change Occurred

Focus on FINANCIAL REPORTING not operations

- GASB establishes accounting and financial reporting standards, not funding policies
- Focus on pension obligation, changes in obligation, and attribution of expense
- **Therefore – converting from modified cash to full accrual basis**
  - Many employers operate on a cash / modified cash / modified accrual basis for budgetary operations
  - Existing note disclosure contains minimal pension information
  - Existing Required supplementary information is not on a full accrual basis
  - Employers with law not requiring GAAP will have minimal changes under GASB-68

Assume Governments Last Longer than 1 year Unlike Businesses

- Cost of services to long-term operation
- “Interperiod equity” matches current period resources and costs

Why the Change Occurred

Use Federal Guidance (US DOL / SSA) on Who is an Employee and Who they Work For

- Employer incurs an obligation to its employees for pension benefits
- Transaction is in context of a career-long relationship
- **Therefore – EMPLOYER has reporting and not plan**

Pressure from the user community for better disclosure

- Bond holders and rating agencies have largely had to build their own models for pension calculations / disclosure
- Public interest research groups have focused on the full cost of government including post-employment benefits in recent years
- *Proposed* model for changing retiree health care (OPEB) financial reporting is similar

4 Big Deals

1. **Brand New Net Pension Liability** (or asset) on the face of the employer's statement of net position *based on allocations made by Plans*
2. **Brand New Pension Expense** in statement of activities based on allocations made by plan with *potential further allocations* to funds
   - Has nothing to do with funding / contributions
3. **Brand New Note Disclosure**
4. **Brand New Required Supplementary information**

Big Deal #1 – Brand New Net Pension Liability (or asset)

1. **Brand New Net Pension Liability** (or asset) on the face of the employer's statement of net position
   - Potential pension information in enterprise funds
   - Any current payable amounts to plans in governmental funds
   - Liability is a function of discount rate – more assets to pay benefits for longer period of time, higher rate
     - PERS / TFFR currently at 8%
   - Simple equation
     - Market value of pension assets held in trust at measurement date – less
     - Total pension liability

Big Deal #1 -Actual Net Pension Liability – June 30, 2014 Per Segal (in thousands) (*unaudited*)

	PERS Main	TFFR
Total Pension Liability at 8.00%	$2,846,580	$3,138,800
Net Plan Position (i.e., MVA)	(2,211,859)	(2,090,977)
Net Pension Liability (NPL)	**$634,721**	**$1,047,823**
Plan Fiduciary Net Position as a % of Total Pension Liability	77.7%	66.6%
Sensitivity to changes in discount rate		
• 1% decrease (7.00%)	$978,928	$1,414,755
• Current discount rate (8.00%)	**634,721**	**1,047,823**
• 1% increase (9.00%)	**346,917**	**739,222**

- NPL is calculated for each Plan in total
- Each employer is assigned a share of the NPL, based on contribution data

Big Deal #2 – Brand New Pension Expense

- **No change will occur in contribution rates *solely* due to implementation of GASB-68**
  - Old pension expense is based explicitly on an statutory rates
  - The ARC, which is the "annual required contribution"
    - Even though is not required to be contributed!
  - Based on established practices for managing contribution volatility
    - Asset smoothing and UAAL amortization
  - The ARC served as a de facto funding standard
- New GASB pension expense is the change in NPL each year, with deferred recognition of only certain elements
  - ARC Specifically not intended to be a funding target or standard
- Allocation of Pension Expense to Employers will be different from cash outflow to Plans

Big Deal #2 – Brand New Pension Expense

- Changes in Total Pension Liability that are recognized (i.e., expensed) immediately—no deferrals allowed
  - Service cost – pensionable compensation x rate
  - + Annual interest on the TPL
  - - Projected investment returns over the year
  - + / - All plan amendments
- Immediate recognition of all plan amendments, whether for actives or retirees
  - Probably different from funding
- Changes in assumptions / demographics *may* be immediate expense *or* amortized over remaining service of covered employees

Big Deal #2 – Brand New Pension Expense

- Summary of New Pension Expense Components in table below – a great *communication tool* to decision-makers
- Changes in the employer's Net Pension Liability will be recognized in pension expense more quickly – could be confusing

<table>
<tr><th></th><th colspan="2">Current Standards</th><th colspan="2">New Standards</th></tr>
<tr><th>Source of Change in the Net Pension Liability</th><th>Expense</th><th>Deferral</th><th>Expense</th><th>Deferral</th></tr>
<tr><td>Service Cost</td><td>Immediate</td><td>None</td><td>Immediate</td><td>None</td></tr>
<tr><td>Interest on the TPL</td><td>Immediate</td><td>None</td><td>Immediate</td><td>None</td></tr>
<tr><td>Projected Investment Earnings</td><td>Immediate</td><td>None</td><td>Immediate</td><td>None</td></tr>
<tr><td>Changes in Benefit Terms</td><td rowspan="5">Initial period amount</td><td rowspan="5">Amortization over a period up to 30 years (closed or open)</td><td>Immediate</td><td>None</td></tr>
<tr><td>Changes in Assumptions</td><td rowspan="3">Initial period amount</td><td rowspan="2">Expense over average remaining service period of actives and inactives</td></tr>
<tr><td>Differences between Assumed and Actual Economic and Demographic Factors</td></tr>
<tr><td>Differences between Projected and Actual Earnings</td><td>Expense over 5-year closed period</td></tr>
<tr><td>Other Changes in the NPL</td><td>Immediate</td><td>None</td></tr>
</table>

Big Deal #2 Brand New Pension Expense - What Does it All Mean?

- Fiscal folk in the room will have some explaining to do to decision – makers
  - Decision – makers are used to compensation x statutory rate OR rate per employee
  - Budget and funding only a component of expense
  - **Suggestion – use the following slide to insert a schedule in MD&As to translate from annual contributions to annual expense as follows…**

A *Possible* Way to Translate for Decision-makers

Statutory Contributions	
Adjustments for annual amortizations of:	
Actuarial differences between payroll based contributions and GASB-68 expense, as well as recording of deferred inflows and outflows of resources	
Current year Amortization of prior differences between actual and expected experience	
Changes in assumptions	
Current year amortization of prior differences between projected and actual earnings on plan investments	
Changes in proportion and differences between contributions and proportionate share of contributions	
Contributions subsequent to measurement date recognized as deferred outflows of resources (GASB-71)	*Will need to be calculated by District**
Pension Expense	

GASB-71 requires adjustment of expense for contributions after measurement date – see later

Actual Pension Expense for FYE June 30, 2014 per Segal (in thousands) (*unaudited*)

	PERS Main	TFFR
Service cost	$91,683	$56,751
Interest on the Total Pension Liability	213,342	237,821
Projected earnings on plan investments	(152,171)	(145,453)
Member contributions	(65,623)	(58,589)
Recognized portion of current-period difference between expected and actual experience	4,378	1,335
Recognized portion of current-period difference between projected and actual earnings on pension plan investments	(30,975)	(29,759)
Administrative expense	2,169	1,586
Pension expense (benefit) for FYE 6/30/2014	$62,803	$63,694

Totals may not add due to rounding

Could Pension Expense Ever Be Negative?

- YES!
  - Key #1 - If fiduciary net position (level of assets) rises faster than level of total pension liability – could be a net benefit to employers
  - Key #2 - Demographics –
    - Younger demographics – longer amortizations of changes in plan
    - Amortization of investment return differences will be faster than demographic changes
  - Key #3 – large sustained increase in interest rates over discount rate
- Result - Amortizations of prior deferrals could release more negative expense (to the good) than positive expense (to the bad)

Big Deal #2 – Brand New Pension Expense - continued

- Current standards are simple
  - Pension expense is equal to the statutorily required contribution
    - No “ARC” on financial statements
  - “Balance sheet” only presents the sum of the difference (if any) since 1988 between the statutorily required contribution and the actual contribution – currently $0
  - Unfunded actuarial accrued liability is not reported at all on employers’ statements

Big Deal #2 – Brand New Pension Expense – continued - Accounting for Cost-Sharing

- Recognize <u>proportionate share</u> of *the plan's* total
  - Net Pension Liability
  - Pension Expense
  - Deferred Inflows and Deferred Outflows Positions

NONE of these are to be reported on the plan financial statements due to employer : employee exchange of work for compensation

Big Deal #2 – Brand New Pension Expense – continued - Impact on Employers - Summary

- Each employer must disclose their proportionate share of:
  - Net Pension Liability (Asset)
  - Pension expense
  - Deferred outflows of resources and deferred inflows of resources related to pensions
- For both PERS Main and TFFR, the proportionate share is allocated based on covered payroll
  - PERS Main proportionate share allocations range from 0.000962% to 2.532988%, State is 56.152315%.
  - TFFR proportionate share allocations range from 0.000687% to 10.894306%

Proportionate Share of Accounting Elements – PERS Main System per Segal (in thousands) (unaudited)

	Total	State Employees	Large Employer	Small Employer
Payroll	$842,379	$473,015	$21,337	$8
NPL/Proportionate Share	634,721	356,411	16,077	6
Sensitivity to changes in discount rate				
• 1% decrease (7.00%)	$978,928	$549,691	$24,796	9
• Current discount rate (8.00%)	634,721	356,411	16,077	6
• 1% increase (9.00%)	346,917	194,802	8,787	3
Pension Expense/Proportionate Share	$62,803	$35,265	$1,591	$0.6
Deferred Outflows of Resources	24,957	14,013	632	$0.2
Deferred Inflows of Resources	(154,875)	(86,966)	(3,923)	(1)

Proportionate Share of Accounting Elements – TFFR per Segal (in thousands) (unaudited)

	Total	Large District	Small District
Covered Payroll	$580,053	$43,480	$4
NPL/Proportionate Share	1,047,823	$78,543	$7
Sensitivity to changes in discount rate			
• 1% decrease (7.00%)	$1,414,755	$106,047	$10
• Current discount rate (8.00%)	1,047,823	78,543	$7
• 1% increase (9.00%)	739.222	55,411	$5
Pension Expense/Proportionate Share	$63,694	$4,774	$0.44
Deferred Outflows of Resources	8,012	601	$0.06
Deferred Inflows of Resources	(119,035)	(8,923)	($0.82)

Big Deal #3 Brand New Note Disclosure

- **Information is being developed by the plan in a "template"**
- Descriptive Plan Information
  - Name of the Pension Plan
  - Identification as Single Employer/Agent Plan/Cost Sharing Plan and the Plan Administrator
  - Benefit Terms (classes of employees covered, types of benefits, key elements of the pension formula, automatic COLAs, authority under which benefit terms are established
  - Brief description of Contribution Requirements
  - Whether the pension plan issues a standalone financial report or included part of another government entity.

Big Deal #3 Brand New Note Disclosure

- Discount Rate Disclosures
  - Discount Rate applied and change from last measurement date.
  - Assumptions about projected cash flows related to the pension plan including contributions from employers, non-employers and employees.
  - Long-term expected rate of return and how it was determined.
  - Municipal bond rate used and source of that rate.
  - Breakdown of how projected benefit payments are allocated between those applied to the long-term expected rate of return and municipal bond rate to arrive at the discount rate.
  - Assumed Asset Allocation and long-term expected rate of return applied to each asset class.
  - NPL calculated using a discount rate that is +/-1% than stated Discount Rate

Big Deal #3 Brand New Note Disclosure

Significant Assumptions

- Inflation
- Salary Changes
- Ad Hoc post-employment benefit changes (COLA)
- Mortality Assumptions/Source of Assumptions (i.e. published mortality table/experience study)
- Dates of the Experience Study

Big Deal #4 Brand New Required Supplementary Information

- **Schedule 1:**
  - **10 Year** – Employer's Proportionate Share (%, Amount) of Collective NPL, Covered Employee Payroll, Net Pension Liability as a % of Employee Covered Payroll, Pension Plans Net Position as % of TPL
- **Schedule 2:**
  - **10 Year -** Statutory/Contractual Contributions to Actual Contributions and Payroll
- **Note disclosure to RSI**
- Existing information ends this year
  - Some plans / employers considering keeping it as a supplementary schedule for comparability –
    - Not required and **may confuse readers**

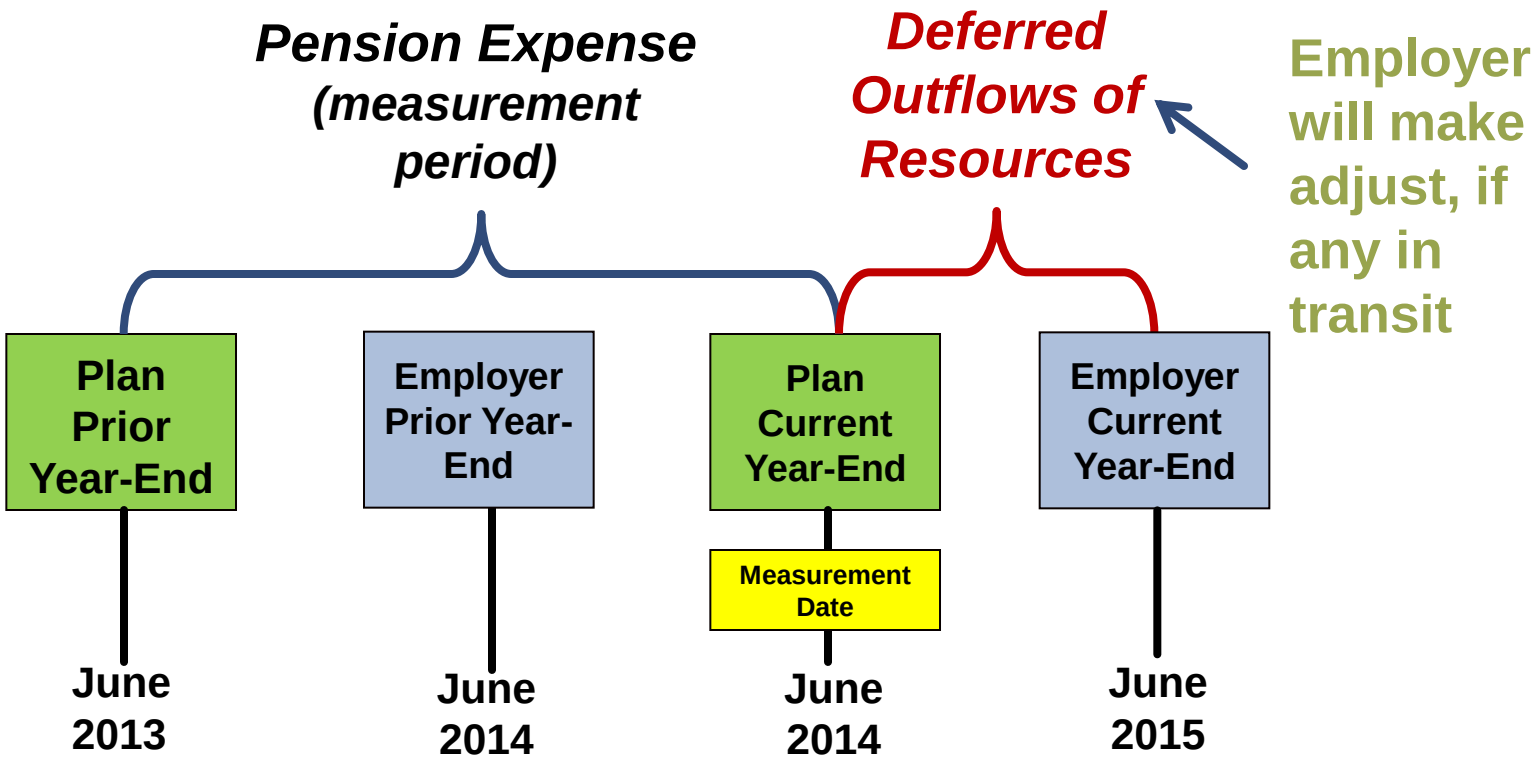
Effective Date and Transition Issues

- **Plans** – Done
- **Employers –** Fiscal years *beginning after* June 15, 2014
  - December 31 employers would be 1/1/15
- Prior period adjustments will likely take place for a number of years as deferred positions become clarified
- RSI
  - If data is unknown at transition – must include a text box on each schedule explaining why – similar to GASB-54

Key Dates

- Potentially 3 different dates we need to think about
  - Employer fiscal year-end
  - Measurement date (of NPL)
    - As of date no earlier than end of prior fiscal year
    - Both components (TPL/plan net position) as of the same date
  - Actuarial valuation date (of TPL)
    - If not measurement date, as of date no more than 30 months (+1 day) prior to FYE
    - Actuarial valuations at least every 2 years (more frequent valuations encouraged)
      - **PERS and TFFR are annual valuations**
- Coordination with pension plan

Timing of Measurement of Total Pension Liability 6/30 Example



Measurement date will most likely correspond to year-end of plan. Employer contributions made directly by the employer subsequent to the measurement date of the net pension liability and before the end of the employer's fiscal year should be recognized as a deferred outflow of resources.

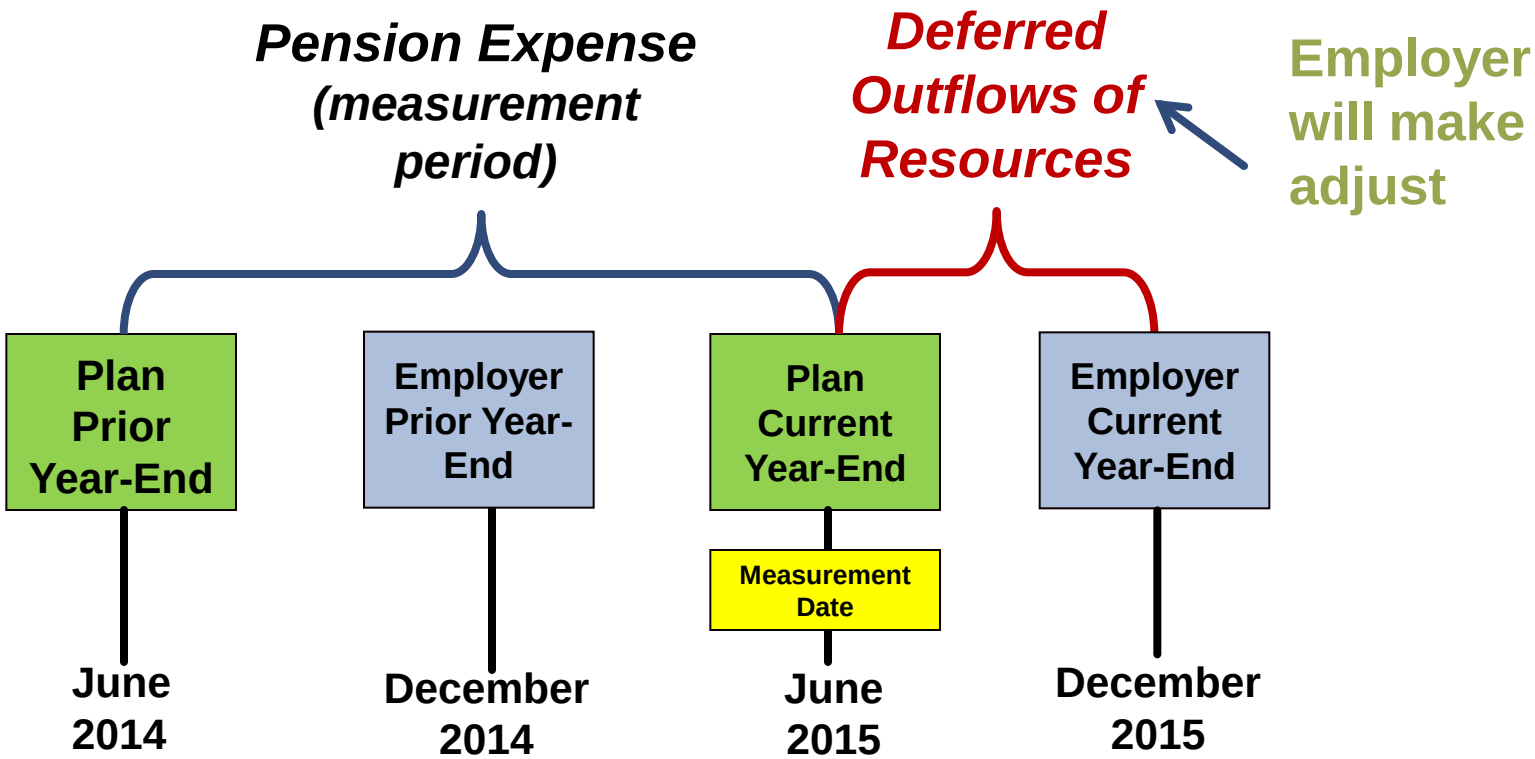
Example of Adjust After Year End

- The measurement date of TFFR is June 30, 2014. From July 1, 2014 to June 30, 2015, the next measurement date of TFFR is not until June 30, 2015 and will not be released in time for employers to issue 2015 financial statements ***but can be used for 2016 financial statements under GAAP.***
- ***Adjust is from 7/1/14 to 6/30/15***

Debit / Credit	Accounts	Amounts	
Debit	Deferred Outflows of Resources	$#,###,###	
Credit	Pension Expense		$#,###,###

- On July 1, 2015, reverse the transaction
- Similar structure (different numbers) annually after

Timing of Measurement of Total Pension Liability
12/31 year end



Measurement date will most likely correspond to year-end of plan. Employer contributions made directly by the employer subsequent to the measurement date of the net pension liability and before the end of the employer's fiscal year should be recognized as a deferred outflow of resources.

Example of Adjust After Year End 12/31 Employer

- The measurement date of PERS is June 30, 2015. From January 1, 2015 to December 31, 2015 – report is done on a timely basis
- ***Adjust for contributions made after measurement date (7/1/15-12/31/15)***

Debit / Credit	Accounts	Amounts	
Debit	Deferred Outflows of Resources	$#,###,###	
Credit	Pension Expense		$#,###,###

- On January 1, 2016, reverse the transaction
- Similar structure (different numbers) annually

Census Data Audits

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Census Data to Be Audited

- Key census data
  - Date of birth
  - Gender (male or female)
  - Date of hire or years of service
  - Date of termination or retirement
  - Marital status
  - Spouse date of birth
  - *Eligible* compensation (may NOT equal W-2s, especially in higher education)
  - Employment status
- Auditing census data
  - Active employees
  - Inactive/retired
- Resolving exceptions

The auditor must test the reliability and completeness of the census data provided to the actuary.

Cost Sharing Employers

- 2 White Papers published by AICPA
  - Census data testing
  - Plan reporting to employers
- Census data testing would be **based on risk**
  - Testing coordinated by plan auditor
    - Employers > 20% of plan active employees tested annually
    - Between 5% and 20% - tested every 5 years **Any?**
    - Less than 5% - tested every 10 years **but some tested annually to get comfort**
    - Very small employers may never get tested – immaterial
  - Report is an attestation report

Cost-Sharing Plan Issues

- Audited plan financial statements don't give participating employers everything they need
- AICPA whitepapers at

  http://www.aicpa.org/INTERESTAREAS/GOVERNMENTALAUDITQUALITY/RESOURCES/GASBMATTERS/Pages/default.aspx

  Remember – these are "best practices"

Cost-Sharing Plan Issues – Solutions provided by AICPA

- Plan provides supplemental "schedule of employer allocations" for which plan auditor is engaged to provide opinion

  Note: Above not required by standard, but other alternatives create inconsistency and additional audit burden

Cost-Sharing Plan Issues – Solutions Provided by AICPA

- Plan provides supplemental "schedule of plan pension amounts by employer" for which plan auditor engaged to provide opinion
  - Supplemental schedule showing the following amounts by employer
    - Net pension liability
    - Deferred outflows (by category)
    - Deferred inflows (by category)
    - Pension expense

Cost-Sharing Plan - Employer Auditor Considerations

- Evaluate plan auditor's report on supplemental schedules (AU-C 805)
  - If plan auditor doesn't report on, evaluate necessary audit procedures
- Test amounts in schedules relating to employer
- Test census data?
- Additional procedures as considered necessary
- Objective - sufficient appropriate audit evidence

Key Concerns and Decisions Made by TFFR and PERS

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Key Questions and Decisions Made

Key Question	Decisions Made
Timing of information	TFFR and PERS will have annual GASB 68 information posted to plan websites by March 1 (i.e. June 30, 2014 information **will be available March 1, 2015 so employers <u>will likely use the prior year information</u>**).
Who will be responsible for information	The pension plans and the employers **share responsibility**. TFFR and PERS will provide much of the required pension information. However, it will be the employer and employer auditor's responsibility to correctly incorporate the information into the employer's financials.
What's the basis of allocation and to how many decimal places?	TFFR and PERS have selected actual covered payroll to determine the employer allocation percentages. Each retirement plan will use the number of decimal places needed to allocate the total NPL down to an immaterial amount (i.e. 6 decimal places after % or xx.xxxxxx% for 2014 information).

Key Questions and Decisions Made

Key Question	Decisions Made
Will Plan prepare "templates" for employers with basic financial statement information / note disclosure / RSI?	Yes. TFFR, PERS, and plan actuary will prepare this information and make it available to employers annually on the plan's websites.
Who / When will auditing of census data take place?	TFFR and PERS plan auditors plan to conduct the census data audits between August and January of each year.
Who / When will auditing of "templates" take place?	Employer's auditor will review note disclosure as part of the financial statement audits
Who / When will auditing of Employer Allocation Schedule and Schedule of Pension Amounts take place?	TFFR and PERS plan auditors will audit these two schedules prior to the schedules being made available to employers on the plan's websites.

Key Questions - Employers

- Employers are ultimately responsible for amounts disclosed in basic financial statements, required supplementary information and information contained in the notes to the basic financial statements
- Cost-sharing multiple-employer plans
  - Obtain amounts and disclosures for the financials
  - Evaluating accuracy of information
  - What work will my auditors need to do?

Key Questions- Employer's Auditors

- Timing of information needed for audit
- Role in evaluating actuarial assumptions
- Need to engage auditor's specialist?
- Will plan engage auditors to provide assurance on employer information?
- Did plan auditors engage a specialist?
- Qualifications of plan auditor
- Implementation concerns (timing, resources)
- Sufficient appropriate audit evidence for unmodified opinion?

Talking Points to Your Decision Makers / Media

- Remember the 3 C's
  - **Consistent** messaging
  - **Concise** information (not data)
  - **Calm** not chaos
- **Talking points**
  - GASB Pension standards are for financial reporting, not overall decision-making or funding
    - But may drive changes in decisions in the future
  - Transparency in financials are increasing due to new standards
  - New financial statements reflect economic reality rather than historical cash flow
  - The plan is NOT changing solely due to new standards
  - Coordination and administration are being done very conservatively at the state level

Questions!

Eric S. Berman, MSA, CPA, CGMA

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CPAs & BUSINESS ADVISORS

North Dakota Teachers' Fund for Retirement

Governmental Accounting Standards Board (GASB)
Statement Nos. 67 and 68
Actuarial Valuation as of July 1, 2014

Unaudited – For Training Purposes Only

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November 14, 2014

Board of Trustees
North Dakota Teachers' Fund for Retirement
1930 Burnt Boat Drive, P.O. Box 7100
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, 2014.

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
Senior Vice President and Actuary

Matthew A. Strom, FSA, EA, MAAA
Vice President and Actuary

SECTION 1

VALUATION SUMMARY

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Significant Issues in Valuation Year..... i
Summary of Key Valuation Results..... iii

SECTION 2

GASB 67 AND 68 INFORMATION

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SECTION 3

ADDITIONAL INFORMATION FOR GASB 68

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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, 2014. This valuation is based on:

- The benefit provisions of the Fund, as administered by the Board;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of July 1, 2014;
- The assets of the Fund as of June 30, 2014;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The Governmental Accounting Standards Board (GASB) approved two new Statements affecting the reporting of pension liabilities for accounting purposes. Statement 67 replaces Statement 25 and is for plan reporting. Statement 68 replaces Statement 27 and is for employer reporting. Statement 67 is effective with the fiscal year ending June 30, 2014, for Plan reporting. Statement 68 is 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 new 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 $1.16 billion as of June 30, 2013, to $1.05 billion as of June 30, 2014. Changes in these values during the prior fiscal year ending June 30, 2014, can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL was 8.00% as of both June 30, 2014 and 2013. 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

	2014
Disclosure elements for fiscal year ending June 30:	
Service cost	$56,751,722
Total pension liability	3,138,799,773
Plan fiduciary net position	2,090,977,056
Net pension liability	1,047,822,717
Plan fiduciary net position as a percentage of total pension liability	66.6%
Schedule of contributions for fiscal year ending June 30:	
Actuarially determined contributions	$59,513,485
Actual contributions	62,355,146
Contribution deficiency (excess)	(2,841,661)
Demographic data as of July 1:	
Number of retirees and beneficiaries	7,747
Number of inactive vested members	1,509
Number of inactive non-vested members	661
Number of active members	10,305
Key assumptions:	
Discount rate	8.00%
Inflation rate	3.00%
Projected salary increases	4.50% to 14.75%, varying by service
Investment rate of return	8.00%

EXHIBIT 1

Membership Data

	July 1, 2014
Retired members and beneficiaries	7,747
Vested inactive members	1,509
Non-vested inactive members	661
Active members:	
Vested	7,406
Non-vested	2,899
Total active members	10,305
Total membership	20,222

Active Membership By Plan Eligibility

	July 1, 2014
Tier 1 Grandfathered	3,240
Tier 1 Non-grandfathered	3,395
Tier 2	3,670
Total active membership	10,305

EXHIBIT 2

Net Pension Liability

The components of the net pension liability are as follows:

	June 30, 2014	June 30, 2013
Total pension liability	$3,138,799,773	$2,997,139,087
Plan fiduciary net position	(2,090,977,056)	(1,839,583,960)
Net pension liability	$1,047,822,717	$1,157,555,127
Plan fiduciary net position as a percentage of the total pension liability	66.6%	61.4%

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, 2014.

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2014, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	4.50% to 14.75%, varying by service, including inflation and productivity
Investment rate of return	8.00%, net of investment expenses
Cost-of-living adjustments	None

For inactive members and healthy retirees, mortality rates are based on 80% of GRS Table 378 and 75% of GRS Table 379. For active members, mortality rates are based on the post-retirement mortality rates multiplied by 60% for males and 40% for females. For disabled retirees, mortality rates are based on the RP-2000 Disabled-Life tables for Males and Females multiplied by 80% and 95%, respectively.

The actuarial assumptions used were based on the results of an experience study dated January 21, 2010. They are the same as the assumptions used in the July 1, 2014, funding actuarial valuation for TFFR.

The long-term expected investment rate of return assumption was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding

expected inflation. Best estimates of arithmetic real rates of return 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	57%	7.53%
Global Fixed Income	22%	1.40%
Global Real Assets	20%	5.38%
Cash Equivalents	1%	0.00%
Total	100%	

Discount rate: The discount rate used to measure the total pension liability was 8.00% as of June 30, 2014. 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, 2014, 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, 2014. 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, 2014.

Supporting documentation for these projections can be provided upon request.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of June 30, 2013, and June 30, 2014, calculated using the discount rate of 8.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Net pension liability as of June 30, 2013	$1,511,142,356	$1,157,555,127	$860,669,595
Net pension liability as of June 30, 2014	$1,414,755,083	$1,047,822,717	$739,221,908

EXHIBIT 3

Schedule of Changes in Net Pension Liability

	2014
Total pension liability	
Service cost	$56,751,722
Interest	237,820,894
Change of benefit terms	0
Differences between expected and actual experience	9,347,346
Changes of assumptions	0
Benefit payments, including refunds of employee contributions	(162,259,276)
Net change in total pension liability	$141,660,686
Total pension liability – beginning	2,997,139,087
Total pension liability – ending (a)	$3,138,799,773
Plan fiduciary net position	
Contributions – employer	$62,355,146
Contributions – member	56,554,767
Contributions – purchased service credit	2,034,289
Contributions – other	47,766
Net investment income	294,246,449
Benefit payments, including refunds of employee contributions	(162,259,276)
Administrative expense	(1,586,045)
Net change in plan fiduciary net position	$251,393,096
Plan fiduciary net position – beginning	1,839,583,960
Plan fiduciary net position – ending (b)	$2,090,977,056
Net pension liability – ending (a) – (b)	$1,047,822,717
Plan fiduciary net position as a percentage of the total pension liability	66.6%
Actual covered employee payroll	$580,053,235
Plan net pension liability as percentage of covered employee payroll	180.6%

EXHIBIT 4

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%

Notes to Exhibit 4

Valuation date	Actuarially determined contribution rates are calculated as of June 30, with appropriate interest to the middle of the fiscal year.
Methods and assumptions used to establish "actuarially determined contribution" rates:	
Actuarial cost method	Entry Age Actuarial cost method
Amortization method	Level percentage of pay, closed
Remaining amortization period	29 years as of July 1, 2014.
	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	8.00%, net of all expenses
Inflation rate	3.00%
Projected salary increases	4.50% to 14.75%, varying by service, includes inflation and productivity
Mortality	Healthy: 80% of GRS Table 378 and 75% of GRS Table 379, with active rates equal to these rates multiplied by 60% for males and 40% for females.
	Disabled: RP-2000 Disabled-Life tables for Males and Females, multiplied by 80% and 95%, respectively.
Other assumptions:	Same as those used in the July 1, 2014, and July 1, 2013, actuarial funding valuations.

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)		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) – (b)**
Balances at beginning of year	$2,997,139,087	$1,839,583,960	$1,157,555,127
Changes for the year			
Service cost	56,751,722		56,751,722
Interest	237,820,894		237,820,894
Differences between expected and actual experience	9,347,346		9,347,346
Contributions – employer		62,355,146	(62,355,146)
Contributions – member		56,554,767	(56,554,767)
Contributions – purchased service credit		2,034,289	(2,034,289)
Contributions – other		47,766	(47,766)
Net investment income		294,246,449	(294,246,449)
Benefit payments, including refunds of employee contributions	(162,259,276)	(162,259,276)	0
Administrative expense		(1,586,045)	1,586,045
Changes of assumptions			0
Change of benefit terms			0
Net changes	141,660,686	251,393,096	(109,732,410)
Balances at end of year	$3,138,799,773	$2,090,977,056	$1,047,822,717

As shown in Exhibit A, the change in net pension liability due to differences between expected and actual demographic experience is an increase of $9,347,346. The average expected remaining service lives of all members is 7 years, determined as of July 1, 2013. Therefore, of the $9,347,346 experience loss, $1,335,335 is recognized in pension expense in the current year and $8,012,011 is reflected as a deferred outflow of resources related to pensions.

Based on the assumed investment return of 8.00%, the expected net investment income for the year was $145,452,583. As shown in Exhibit A, the actual net investment income for the year was $294,246,449. The difference between actual and expected investment experience is a decrease in net pension liability of $148,793,866, which is recognized over a 5-year period. Of this amount, $29,758,773 is reflected in the current year and $119,035,093 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	Outstanding Balance at June 30, 2014
Outflows					
Demographic	2014	$9,347,346	7 years	$1,335,335	$8,012,011
Total outflows				**$1,335,335**	**$8,012,011**
Inflows					
Investment	2014	$148,793,866	5 years	$29,758,773	$119,035,093
Total inflows				**$29,758,773**	**$119,035,093**

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

At June 30, 2014, deferred outflows of resources and deferred inflows of resources related to pensions are:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$8,012,011	$0
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	-	119,035,093
Total	$8,012,011	$119,035,093

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

Year Ended June 30:	
2015	($28,423,438)
2016	(28,423,438)
2017	(28,423,438)
2018	(28,423,438)
2019	1,335,335
Thereafter	1,335,335

Exhibit C below shows the individual components of collective pension expense, which totaled $63,693,584 for the fiscal year that ended June 30, 2014.

Annual pension expense for the year can also be viewed as the change in net pension liability, plus employer and other 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 ($109,732,410) and employer and other non-member contributions were $62,355,146 and $47,766, respectively. The net value of deferred outflows and deferred inflows of resources as of the end of the current fiscal year is ($111,023,082) compared to the net value as of the end of the prior fiscal of $0, for a change of ($111,023,082). Therefore, the pension expense for the fiscal year that ended June 30, 2014, is ($109,732,410) + $62,355,146 + $47,766 – ($111,023,082), or $63,693,584.

EXHIBIT C

Collective Pension Expense

	Fiscal Year Ending June 30, 2014
Components of pension expense	
Service cost	56,751,722
Interest on the total pension liability	237,820,894
Projected earnings on plan investments	(145,452,583)
Contributions – member	(56,554,767)
Contributions – purchased service credit	(2,034,289)
Administrative expense	1,586,045
Current year recognition of:	
Changes of assumptions	0
Difference between expected and actual experience	1,335,335
Difference between projected and actual earnings on pension plan investments	(29,758,773)
Change of benefit terms	0
Total pension expense	$63,693,584

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, 2014, 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. For this initial implementation of GASB 68, the same proportionate share allocation basis was used for June 30, 2013, and June 30, 2014. As a result, there are no changes in any employer's proportionate share of the total net pension liability during the measurement period ended June 30, 2014.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2014, 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.

Exhibits D and E that follow show the proportionate share information for employers of TFFR for the fiscal year ending June 30, 2014.

EXHIBIT D
Schedule of Employer Allocations

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Alexander School	$ 830,899	0.143245%
Anamoose School	618,769	0.106675%
Apple Creek Elem School	338,460	0.058350%
Ashley School	877,146	0.151218%
Bakker Elem School	33,500	0.005775%
Barnes County North	1,681,343	0.289860%
Beach School	2,056,674	0.354566%
Belcourt School	7,783,579	1.341873%
Belfield Public School	1,270,974	0.219113%
Beulah School	3,233,309	0.557416%
Billings Co. School Dist.	730,500	0.125937%
Bismarck Public Schools	61,729,312	10.642008%
Bismarck State College	31,287	0.005394%
Blessed John Paul Ii Catholic Sch Network	30,583	0.005272%
Bottineau School	3,517,441	0.606400%
Bowbells School	506,559	0.087330%
Bowman School	2,588,190	0.446199%
Burke Central School	834,871	0.143930%
Burleigh County Spec. Ed.	67,427	0.011624%
Carrington School	2,652,356	0.457261%
Cavalier School	1,975,331	0.340543%
Center Stanton School	1,318,874	0.227371%
Central Cass School	3,318,777	0.572150%
Central Elementary School	60,675	0.010460%
Central Valley School	1,213,536	0.209211%
Dakota Prairie School	1,642,062	0.283088%
Devils Lake School	9,920,576	1.710287%
Dickinson School	15,053,043	2.595114%
Divide School	2,153,799	0.371311%
Drake School	531,426	0.091617%
Drayton School	1,073,296	0.185034%
Dunseith School	2,417,614	0.416792%
E Central Ctr Exc Childn	753,226	0.129855%
Earl Elem. School	30,500	0.005258%
Edgeley School	1,159,504	0.199896%
Edmore School	636,310	0.109699%
Eight Mile School	1,194,837	0.205987%
Elgin-New Leipzig School	956,798	0.164950%
Ellendale School	1,704,838	0.293911%
Emerado Elementary School	532,695	0.091836%
Enderlin Area School District	1,798,257	0.310016%
Fairmount School	938,411	0.161780%
Fargo Public Schools	63,192,777	10.894306%
Fessenden-Bowdon School	890,345	0.153494%
Finley-Sharon School	1,089,511	0.187829%
Flasher School	1,051,427	0.181264%
Fordville Lankin School	543,046	0.093620%
Fort Ransom Elem School	151,858	0.026180%
Fort Totten School	1,527,893	0.263406%
Fort Yates School	1,016,294	0.175207%
Gackle-Streeter Pub Sch	714,480	0.123175%
Garrison School	2,037,409	0.351245%
Glen Ullin School	988,078	0.170343%
Glenburn School	1,490,810	0.257013%
Goodrich School	276,766	0.047714%
Grafton School	3,993,377	0.688450%
Grand Forks School	41,737,522	7.195464%
Great North West Cooperative	127,950	0.022058%
Grenora School	969,771	0.167187%
Griggs County Central Sch	1,687,790	0.290972%
Gst Educational Services	1,444,577	0.249042%
Halliday School	414,542	0.071466%
Hankinson School	1,553,754	0.267864%
Harvey School	2,087,474	0.359876%
Hatton Eielson Psd	1,055,272	0.181927%
Hazelton - Moffit School	764,749	0.131841%
Hazen School	2,578,459	0.444521%
Hebron School	1,090,884	0.188066%

EXHIBIT D
Schedule of Employer Allocations

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Hettinger School	1,534,952	0.264623%
Hillsboro School	2,120,182	0.365515%
Hope School	589,222	0.101581%
Horse Creek Elem. School	34,500	0.005948%
James River Multidistrict Spec Ed Unit	1,132,973	0.195322%
Jamestown School	12,587,748	2.170102%
Kenmare School	1,704,244	0.293808%
Kensal School	374,636	0.064586%
Kidder County School District	2,129,282	0.367084%
Killdeer School	2,322,433	0.400383%
Kindred School	2,927,266	0.504655%
Kulm School	1,025,716	0.176831%
Lake Region Spec Ed	1,676,302	0.288991%
Lakota School	1,137,076	0.196030%
Lamoure School	1,398,670	0.241128%
Langdon Area School	1,954,383	0.336932%
Larimore School	2,067,930	0.356507%
Leeds School	1,000,320	0.172453%
Lewis And Clark School	2,355,419	0.406069%
Lidgerwood School	1,084,728	0.187005%
Linton School	1,579,946	0.272379%
Lisbon School	3,216,870	0.554582%
Litchville-Marion School	806,940	0.139115%
Little Heart Elem. School	93,871	0.016183%
Logan County	3,989	0.000688%
Lone Tree Elem. School	194,193	0.033479%
Lonetree Spec Ed Unit	138,100	0.023808%
Maddock School	916,807	0.158056%
Mandan Public Schools	16,362,090	2.820791%
Mandaree School	1,603,025	0.276358%
Manning Elem School	67,756	0.011681%
Manvel Elem. School	734,118	0.126560%
Maple Valley School	1,535,009	0.264632%
Mapleton Elem. School	624,849	0.107723%
Marmarth Elem. School	152,312	0.026258%
Max School	1,064,424	0.183505%
May-Port C-G School	2,419,251	0.417074%
Mcclusky School	730,071	0.125863%
Mckenzie County	52,000	0.008965%
Mckenzie County School	4,451,391	0.767411%
Medina School	915,109	0.157763%
Menoken Elem School	115,900	0.019981%
Midkota	1,000,510	0.172486%
Midway School	1,333,369	0.229870%
Milnor School	1,393,821	0.240292%
Minnewaukan School	1,613,737	0.278205%
Minot School	40,092,868	6.911929%
Minto School	1,065,255	0.183648%
Mohall Lansford Sherwood	2,215,188	0.381894%
Montpelier School	658,564	0.113535%
Morton County	25,882	0.004462%
Mott-Regent School	1,438,836	0.248052%
Mt Pleasant School	1,438,971	0.248076%
Munich School	750,564	0.129396%
N Central Area Career And Tech Center	137,820	0.023760%
Napoleon School	1,390,415	0.239705%
Naughton Rural School	65,511	0.011294%
Nd Center For Distance Education	881,057	0.151892%
Nd Dept Of Public Instruction	110,191	0.018997%
Nd School For Blind	641,824	0.110649%
Nd School For Deaf	811,734	0.139941%
Nd United	293,459	0.050592%
Nd Youth Correctional Cnt	1,131,369	0.195046%
Nedrose School	1,301,671	0.224405%
Nelson County	10,607	0.001829%
Nesson School	1,343,679	0.231647%
New England School	1,087,601	0.187500%
New Public School	1,995,103	0.343952%

EXHIBIT D
Schedule of Employer Allocations

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
New Rockford Sheyenne School	1,627,943	0.280654%
New Salem-Almont	1,546,941	0.266689%
New Town School	3,778,325	0.651376%
Newburg United District	581,064	0.100174%
North Border School	2,649,367	0.456746%
North Sargent School	1,188,780	0.204943%
North Star	1,428,747	0.246313%
North Valley Area Career	587,647	0.101309%
Northern Cass School Dist	2,377,286	0.409839%
Northern Plains Spec Ed	188,004	0.032412%
Northwood School	1,293,641	0.223021%
Oakes School	1,900,372	0.327620%
Oberon Elem School	437,642	0.075449%
Oliver - Mercer Spec Ed	853,576	0.147155%
Page School	666,813	0.114957%
Park River Area School District	1,995,232	0.343974%
Parshall School	1,649,224	0.284323%
Peace Garden Spec Ed	437,889	0.075491%
Pembina Spec Ed Coop	167,922	0.028949%
Pingree - Buchanan School	759,383	0.130916%
Pleasant Valley Elem	16,653	0.002871%
Powers Lake School	938,531	0.161801%
Richardton-Taylor	1,543,307	0.266063%
Richland School	1,504,994	0.259458%
Robinson School	70,620	0.012175%
Rolette County	3,984	0.000687%
Rolette School	1,027,903	0.177208%
Roosevelt School	382,597	0.065959%
Roughrider Area Career And Tech Center	159,749	0.027540%
Roughrider Service Program	87,133	0.015021%
Rugby School	2,904,445	0.500720%
Rural Cass Spec Ed	999,887	0.172379%
Sargent Central School	1,323,924	0.228242%
Sawyer School	795,679	0.137173%
Scranton School	1,001,196	0.172604%
Se Region Career And Tech	1,257,571	0.216803%
Selfridge School	785,386	0.135399%
Sheyenne Valley Area Voc	673,958	0.116189%
Sheyenne Valley Spec Ed	1,480,286	0.255198%
Slope County	22,792	0.003929%
Solen - Cannonball School	1,643,353	0.283311%
Souris Valley Spec Ed	1,464,235	0.252431%
South Cent. Prairie Sp Ed	92,600	0.015964%
South Heart School	1,232,757	0.212525%
South Prairie Elem School	1,191,974	0.205494%
South Valley Spec Ed	628,490	0.108350%
Southwest Special Education Unit	60,320	0.010399%
St. John'S School	2,270,215	0.391381%
St. Thomas School	634,787	0.109436%
Stanley School	2,810,250	0.484481%
Starkweather School	555,020	0.095684%
Sterling School	205,087	0.035357%
Strasburg School District	812,275	0.140035%
Surrey School	2,134,233	0.367937%
Sweet Briar Elem School	72,000	0.012413%
Tgu School District	2,496,437	0.430381%
Thompson School	1,863,106	0.321196%
Tioga School	2,345,263	0.404319%
Turtle Lake-Mercer School	1,205,660	0.207853%
Twin Buttes Elem. School	440,692	0.075974%
Underwood School	1,424,552	0.245590%
United School	2,771,048	0.477723%
Upper Valley Spec Ed	2,111,013	0.363934%
Valley - Edinburg School	1,401,830	0.241673%
Valley City School	5,824,480	1.004128%
Velva School	2,316,129	0.399296%
Wahpeton School	6,234,148	1.074754%
Ward County	26,031	0.004488%

EXHIBIT D
Schedule of Employer Allocations

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Warwick School	1,522,299	0.262441%
Washburn School	1,428,913	0.246342%
West Fargo School	43,479,882	7.495843%
West River Student Services	577,229	0.099513%
Westhope School	935,687	0.161311%
White Shield School	1,370,831	0.236328%
Williston School	13,883,985	2.393571%
Wilmac Special Education	2,466,035	0.425139%
Wilton School	1,133,768	0.195459%
Wing School	629,112	0.108458%
Wishek School	1,090,646	0.188025%
Wolford School	458,187	0.078990%
Wyndmere School	1,364,980	0.235320%
Yellowstone Elem. School	460,673	0.079419%
Zeeland School	446,642	0.077000%
Grand Totals:	**580,053,235**	**100%**

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2014

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)	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	0.143245%	$ 1,500,954	$ 830,899	$ 2,026,566	$ 1,500,954	$ 1,058,898	$ 89,321	$ (89,321)	$ -	10.75%	$ 91,238	$ -	$ 91,238
Anamoose School	0.106675%	1,117,765	618,769	1,509,190	1,117,765	788,565	66,517	(66,517)	-	10.75%	67,945	-	67,945
Apple Creek Elem School	0.058350%	611,405	338,460	825,510	611,405	431,336	36,384	(36,384)	-	10.75%	37,165	-	37,165
Ashley School	0.151218%	1,584,497	877,146	2,139,364	1,584,497	1,117,837	94,292	(94,292)	-	10.75%	96,316	-	96,316
Bakker Elem School	0.005775%	60,512	33,500	81,702	60,512	42,690	3,601	(3,601)	-	10.75%	3,678	-	3,678
Barnes County North	0.289860%	3,037,219	1,681,343	4,100,809	3,037,219	2,142,709	180,743	(180,743)	-	10.75%	184,622	-	184,622
Beach School	0.354566%	3,715,223	2,056,674	5,016,241	3,715,223	2,621,030	221,090	(221,090)	-	10.75%	225,836	-	225,836
Belcourt School	1.341873%	14,060,450	7,783,579	18,984,216	14,060,450	9,919,419	836,727	(836,727)	-	10.75%	854,687	-	854,687
Belfield Public School	0.219113%	2,295,916	1,270,974	3,099,912	2,295,916	1,619,731	136,628	(136,628)	-	10.75%	139,561	-	139,561
Beulah School	0.557416%	5,840,731	3,233,309	7,886,071	5,840,731	4,120,541	347,578	(347,578)	-	10.75%	355,038	-	355,038
Billings Co. School Dist.	0.125937%	1,319,596	730,500	1,781,700	1,319,596	930,954	78,528	(78,528)	-	10.75%	80,214	-	80,214
Bismarck Public Schools	10.642008%	111,509,377	61,729,312	150,558,349	111,509,377	78,668,055	6,635,840	(6,635,840)	-	10.75%	6,778,276	-	6,778,276
Bismarck State College	0.005394%	56,520	31,287	76,312	56,520	39,874	3,363	(3,363)	-	10.75%	3,436	-	3,436
Blessed John Paul Ii Catholic Sch Network	0.005272%	55,241	30,583	74,586	55,241	38,972	3,287	(3,287)	-	10.75%	3,358	-	3,358
Bottineau School	0.606400%	6,353,997	3,517,441	8,579,075	6,353,997	4,482,642	378,122	(378,122)	-	10.75%	386,238	-	386,238
Bowbells School	0.087330%	915,064	506,559	1,235,506	915,064	645,562	54,455	(54,455)	-	10.75%	55,624	-	55,624
Bowman School	0.446199%	4,675,374	2,588,190	6,312,623	4,675,374	3,298,401	278,228	(278,228)	-	10.75%	284,200	-	284,200
Burke Central School	0.143930%	1,508,131	834,871	2,036,257	1,508,131	1,063,962	89,748	(89,748)	-	10.75%	91,674	-	91,674
Burleigh County Spec. Ed.	0.011624%	121,799	67,427	164,451	121,799	85,927	7,248	(7,248)	-	10.75%	7,404	-	7,404
Carrington School	0.457261%	4,791,285	2,652,356	6,469,123	4,791,285	3,380,173	285,126	(285,126)	-	10.75%	291,246	-	291,246
Cavalier School	0.340543%	3,568,287	1,975,331	4,817,849	3,568,287	2,517,368	212,346	(212,346)	-	10.75%	216,904	-	216,904
Center Stanton School	0.227371%	2,382,445	1,318,874	3,216,743	2,382,445	1,680,776	141,778	(141,778)	-	10.75%	144,821	-	144,821
Central Cass School	0.572150%	5,995,118	3,318,777	8,094,521	5,995,118	4,229,458	356,765	(356,765)	-	10.75%	364,423	-	364,423
Central Elementary School	0.010460%	109,602	60,675	147,983	109,602	77,323	6,522	(6,522)	-	10.75%	6,662	-	6,662
Central Valley School	0.209211%	2,192,160	1,213,536	2,959,823	2,192,160	1,546,534	130,454	(130,454)	-	10.75%	133,254	-	133,254
Dakota Prairie School	0.283088%	2,966,260	1,642,062	4,005,002	2,966,260	2,092,649	176,520	(176,520)	-	10.75%	180,309	-	180,309
Devils Lake School	1.710287%	17,920,776	9,920,576	24,196,372	17,920,776	12,642,816	1,066,452	(1,066,452)	-	10.75%	1,089,343	-	1,089,343
Dickinson School	2.595114%	27,192,194	15,053,043	36,714,507	27,192,194	19,183,651	1,618,187	(1,618,187)	-	10.75%	1,652,921	-	1,652,921
Divide School	0.371311%	3,890,681	2,153,799	5,253,141	3,890,681	2,744,812	231,532	(231,532)	-	10.75%	236,501	-	236,501
Drake School	0.091617%	959,984	531,426	1,296,156	959,984	677,253	57,128	(57,128)	-	10.75%	58,354	-	58,354
Drayton School	0.185034%	1,938,828	1,073,296	2,617,778	1,938,828	1,367,812	115,378	(115,378)	-	10.75%	117,855	-	117,855
Dunseith School	0.416792%	4,367,241	2,417,614	5,896,586	4,367,241	3,081,018	259,891	(259,891)	-	10.75%	265,470	-	265,470
E Central Ctr Exc Childn	0.129855%	1,360,650	753,226	1,837,130	1,360,650	959,917	80,971	(80,971)	-	10.75%	82,709	-	82,709
Earl Elem. School	0.005258%	55,095	30,500	74,388	55,095	38,868	3,279	(3,279)	-	10.75%	3,349	-	3,349
Edgeley School	0.199896%	2,094,556	1,159,504	2,828,039	2,094,556	1,477,675	124,645	(124,645)	-	10.75%	127,321	-	127,321
Edmore School	0.109699%	1,149,451	636,310	1,551,972	1,149,451	810,919	68,403	(68,403)	-	10.75%	69,871	-	69,871
Eight Mile School	0.205987%	2,158,379	1,194,837	2,914,212	2,158,379	1,522,701	128,443	(128,443)	-	10.75%	131,201	-	131,201
Elgin-New Leipzig School	0.164950%	1,728,384	956,798	2,333,639	1,728,384	1,219,347	102,855	(102,855)	-	10.75%	105,063	-	105,063
Ellendale School	0.293911%	3,079,666	1,704,838	4,158,121	3,079,666	2,172,655	183,269	(183,269)	-	10.75%	187,202	-	187,202
Emerado Elementary School	0.091836%	962,278	532,695	1,299,254	962,278	678,872	57,264	(57,264)	-	10.75%	58,494	-	58,494
Enderlin Area School District	0.310016%	3,248,418	1,798,257	4,385,967	3,248,418	2,291,706	193,311	(193,311)	-	10.75%	197,460	-	197,460
Fairmount School	0.161780%	1,695,168	938,411	2,288,791	1,695,168	1,195,913	100,878	(100,878)	-	10.75%	103,043	-	103,043
Fargo Public Schools	10.894306%	114,153,013	63,192,777	154,127,748	114,153,013	80,533,097	6,793,160	(6,793,160)	-	10.75%	6,938,974	-	6,938,974
Fessenden-Bowdon School	0.153494%	1,608,345	890,345	2,171,564	1,608,345	1,134,661	95,711	(95,711)	-	10.75%	97,766	-	97,766
Finley-Sharon School	0.187829%	1,968,115	1,089,511	2,657,320	1,968,115	1,388,473	117,121	(117,121)	-	10.75%	119,635	-	119,635
Flasher School	0.181264%	1,899,325	1,051,427	2,564,442	1,899,325	1,339,943	113,027	(113,027)	-	10.75%	115,454	-	115,454
Fordville Lankin School	0.093620%	980,972	543,046	1,324,494	980,972	692,060	58,377	(58,377)	-	10.75%	59,630	-	59,630
Fort Ransom Elem School	0.026180%	274,320	151,858	370,383	274,320	193,528	16,325	(16,325)	-	10.75%	16,675	-	16,675
Fort Totten School	0.263406%	2,760,028	1,527,893	3,726,550	2,760,028	1,947,155	164,247	(164,247)	-	10.75%	167,773	-	167,773
Fort Yates School	0.175207%	1,835,859	1,016,294	2,478,750	1,835,859	1,295,169	109,251	(109,251)	-	10.75%	111,596	-	111,596
Gackle-Streeter Pub Sch	0.123175%	1,290,656	714,480	1,742,625	1,290,656	910,537	76,806	(76,806)	-	10.75%	78,455	-	78,455
Garrison School	0.351245%	3,680,425	2,037,409	4,969,256	3,680,425	2,596,480	219,019	(219,019)	-	10.75%	223,721	-	223,721
Glen Ullin School	0.170343%	1,784,893	988,078	2,409,936	1,784,893	1,259,213	106,218	(106,218)	-	10.75%	108,498	-	108,498
Glenburn School	0.257013%	2,693,041	1,490,810	3,636,104	2,693,041	1,899,896	160,261	(160,261)	-	10.75%	163,701	-	163,701
Goodrich School	0.047714%	499,958	276,766	675,036	499,958	352,712	29,752	(29,752)	-	10.75%	30,391	-	30,391
Grafton School	0.688450%	7,213,735	3,993,377	9,739,881	7,213,735	5,089,173	429,284	(429,284)	-	10.75%	438,498	-	438,498
Grand Forks School	7.195464%	75,395,706	41,737,522	101,798,193	75,395,706	53,190,446	4,486,742	(4,486,742)	-	10.75%	4,583,049	-	4,583,049
Great North West Cooperative	0.022058%	231,129	127,950	312,067	231,129	163,058	13,754	(13,754)	-	10.75%	14,050	-	14,050
Grenora School	0.167187%	1,751,823	969,771	2,365,287	1,751,823	1,235,883	104,250	(104,250)	-	10.75%	106,487	-	106,487
Griggs County Central Sch	0.290972%	3,048,871	1,687,790	4,116,541	3,048,871	2,150,929	181,436	(181,436)	-	10.75%	185,330	-	185,330
Gst Educational Services	0.249042%	2,609,519	1,444,577	3,523,334	2,609,519	1,840,973	155,291	(155,291)	-	10.75%	158,624	-	158,624
Halliday School	0.071466%	748,837	414,542	1,011,069	748,837	528,292	44,563	(44,563)	-	10.75%	45,519	-	45,519
Hankinson School	0.267864%	2,806,740	1,553,754	3,789,620	2,806,740	1,980,109	167,027	(167,027)	-	10.75%	170,612	-	170,612
Harvey School	0.359876%	3,770,862	2,087,474	5,091,364	3,770,862	2,660,282	224,401	(224,401)	-	10.75%	229,218	-	229,218
Hatton Eielson Psd	0.181927%	1,906,272	1,055,272	2,573,821	1,906,272	1,344,844	113,441	(113,441)	-	10.75%	115,876	-	115,876
Hazelton - Moffit School	0.131841%	1,381,460	764,749	1,865,227	1,381,460	974,598	82,210	(82,210)	-	10.75%	83,974	-	83,974
Hazen School	0.444521%	4,657,792	2,578,459	6,288,883	4,657,792	3,285,997	277,182	(277,182)	-	10.75%	283,131	-	283,131
Hebron School	0.188066%	1,970,598	1,090,884	2,660,673	1,970,598	1,390,225	117,269	(117,269)	-	10.75%	119,786	-	119,786

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2014

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)	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	0.264623%	2,772,780	1,534,952	3,743,767	2,772,780	1,956,151	165,006	(165,006)	-	10.75%	168,548	-	168,548
Hillsboro School	0.365515%	3,829,949	2,120,182	5,171,142	3,829,949	2,701,967	227,917	(227,917)	-	10.75%	232,810	-	232,810
Hope School	0.101581%	1,064,389	589,222	1,437,122	1,064,389	750,909	63,341	(63,341)	-	10.75%	64,701	-	64,701
Horse Creek Elem. School	0.005948%	62,324	34,500	84,150	62,324	43,969	3,709	(3,709)	-	10.75%	3,788	-	3,788
James River Multidistrict Spec Ed Unit	0.195322%	2,046,628	1,132,973	2,763,328	2,046,628	1,443,863	121,793	(121,793)	-	10.75%	124,408	-	124,408
Jamestown School	2.170102%	22,738,822	12,587,748	30,701,628	22,738,822	16,041,869	1,353,170	(1,353,170)	-	10.75%	1,382,216	-	1,382,216
Kenmare School	0.293808%	3,078,587	1,704,244	4,156,664	3,078,587	2,171,893	183,204	(183,204)	-	10.75%	187,137	-	187,137
Kensal School	0.064586%	676,747	374,636	913,734	676,747	477,434	40,273	(40,273)	-	10.75%	41,137	-	41,137
Kidder County School District	0.367084%	3,846,390	2,129,282	5,193,340	3,846,390	2,713,565	228,896	(228,896)	-	10.75%	233,809	-	233,809
Killdeer School	0.400383%	4,195,304	2,322,433	5,664,439	4,195,304	2,959,719	249,659	(249,659)	-	10.75%	255,018	-	255,018
Kindred School	0.504655%	5,287,890	2,927,266	7,139,632	5,287,890	3,730,520	314,678	(314,678)	-	10.75%	321,433	-	321,433
Kulm School	0.176831%	1,852,875	1,025,716	2,501,726	1,852,875	1,307,173	110,263	(110,263)	-	10.75%	112,630	-	112,630
Lake Region Spec Ed	0.288991%	3,028,113	1,676,302	4,088,515	3,028,113	2,136,285	180,201	(180,201)	-	10.75%	184,069	-	184,069
Lakota School	0.196030%	2,054,047	1,137,076	2,773,344	2,054,047	1,449,097	122,235	(122,235)	-	10.75%	124,859	-	124,859
Lamoure School	0.241128%	2,526,594	1,398,670	3,411,371	2,526,594	1,782,471	150,356	(150,356)	-	10.75%	153,583	-	153,583
Langdon Area School	0.336932%	3,530,450	1,954,383	4,766,763	3,530,450	2,490,675	210,094	(210,094)	-	10.75%	214,604	-	214,604
Larimore School	0.356507%	3,735,561	2,067,930	5,043,701	3,735,561	2,635,378	222,300	(222,300)	-	10.75%	227,072	-	227,072
Leeds School	0.172453%	1,807,002	1,000,320	2,439,788	1,807,002	1,274,810	107,533	(107,533)	-	10.75%	109,841	-	109,841
Lewis And Clark School	0.406069%	4,254,883	2,355,419	5,744,882	4,254,883	3,001,751	253,205	(253,205)	-	10.75%	258,640	-	258,640
Lidgerwood School	0.187005%	1,959,481	1,084,728	2,645,663	1,959,481	1,382,382	116,607	(116,607)	-	10.75%	119,110	-	119,110
Linton School	0.272379%	2,854,049	1,579,946	3,853,496	2,854,049	2,013,485	169,842	(169,842)	-	10.75%	173,488	-	173,488
Lisbon School	0.554582%	5,811,036	3,216,870	7,845,977	5,811,036	4,099,592	345,810	(345,810)	-	10.75%	353,233	-	353,233
Litchville-Marion School	0.139115%	1,457,679	806,940	1,968,137	1,457,679	1,028,369	86,745	(86,745)	-	10.75%	88,607	-	88,607
Little Heart Elem. School	0.016183%	169,569	93,871	228,950	169,569	119,628	10,091	(10,091)	-	10.75%	10,308	-	10,308
Logan County	0.000688%	7,209	3,989	9,734	7,209	5,086	429	(429)	-	10.75%	438	-	438
Lone Tree Elem. School	0.033479%	350,801	194,193	473,646	350,801	247,484	20,876	(20,876)	-	10.75%	21,324	-	21,324
Lonetree Spec Ed Unit	0.023808%	249,466	138,100	336,825	249,466	175,994	14,846	(14,846)	-	10.75%	15,164	-	15,164
Maddock School	0.158056%	1,656,147	916,807	2,236,105	1,656,147	1,168,385	98,556	(98,556)	-	10.75%	100,672	-	100,672
Mandan Public Schools	2.820791%	29,556,889	16,362,090	39,907,284	29,556,889	20,851,905	1,758,908	(1,758,908)	-	10.75%	1,796,663	-	1,796,663
Mandaree School	0.276358%	2,895,742	1,603,025	3,909,789	2,895,742	2,042,899	172,323	(172,323)	-	10.75%	176,022	-	176,022
Manning Elem School	0.011681%	122,396	67,756	165,258	122,396	86,349	7,284	(7,284)	-	10.75%	7,440	-	7,440
Manvel Elem. School	0.126560%	1,326,124	734,118	1,790,514	1,326,124	935,559	78,917	(78,917)	-	10.75%	80,611	-	80,611
Maple Valley School	0.264632%	2,772,874	1,535,009	3,743,895	2,772,874	1,956,218	165,012	(165,012)	-	10.75%	168,554	-	168,554
Mapleton Elem. School	0.107723%	1,128,746	624,849	1,524,017	1,128,746	796,312	67,171	(67,171)	-	10.75%	68,613	-	68,613
Marmarth Elem. School	0.026258%	275,137	152,312	371,486	275,137	194,105	16,373	(16,373)	-	10.75%	16,725	-	16,725
Max School	0.183505%	1,922,807	1,064,424	2,596,146	1,922,807	1,356,509	114,425	(114,425)	-	10.75%	116,881	-	116,881
May-Port C-G School	0.417074%	4,370,196	2,419,251	5,900,576	4,370,196	3,083,102	260,067	(260,067)	-	10.75%	265,649	-	265,649
Mcclusky School	0.125863%	1,318,821	730,071	1,780,653	1,318,821	930,407	78,482	(78,482)	-	10.75%	80,167	-	80,167
Mckenzie County	0.008965%	93,937	52,000	126,833	93,937	66,271	5,590	(5,590)	-	10.75%	5,710	-	5,710
Mckenzie County School	0.767411%	8,041,107	4,451,391	10,856,986	8,041,107	5,672,870	478,520	(478,520)	-	10.75%	488,792	-	488,792
Medina School	0.157763%	1,653,077	915,109	2,231,960	1,653,077	1,166,219	98,373	(98,373)	-	10.75%	100,485	-	100,485
Menoken Elem School	0.019981%	209,365	115,900	282,682	209,365	147,704	12,459	(12,459)	-	10.75%	12,727	-	12,727
Midkota	0.172486%	1,807,347	1,000,510	2,440,254	1,807,347	1,275,054	107,554	(107,554)	-	10.75%	109,863	-	109,863
Midway School	0.229870%	2,408,630	1,333,369	3,252,098	2,408,630	1,699,249	143,336	(143,336)	-	10.75%	146,412	-	146,412
Milnor School	0.240292%	2,517,834	1,393,821	3,399,543	2,517,834	1,776,291	149,834	(149,834)	-	10.75%	153,051	-	153,051
Minnewaukan School	0.278205%	2,915,095	1,613,737	3,935,919	2,915,095	2,056,552	173,475	(173,475)	-	10.75%	177,199	-	177,199
Minot School	6.911929%	72,424,762	40,092,868	97,786,867	72,424,762	51,094,493	4,309,943	(4,309,943)	-	10.75%	4,402,455	-	4,402,455
Minto School	0.183648%	1,924,305	1,065,255	2,598,169	1,924,305	1,357,566	114,514	(114,514)	-	10.75%	116,972	-	116,972
Mohall Lansford Sherwood	0.381894%	4,001,572	2,215,188	5,402,865	4,001,572	2,823,044	238,131	(238,131)	-	10.75%	243,242	-	243,242
Montpelier School	0.113535%	1,189,646	658,564	1,606,242	1,189,646	839,276	70,795	(70,795)	-	10.75%	72,315	-	72,315
Morton County	0.004462%	46,754	25,882	63,126	46,754	32,984	2,782	(2,782)	-	10.75%	2,842	-	2,842
Mott-Regent School	0.248052%	2,599,145	1,438,836	3,509,328	2,599,145	1,833,655	154,673	(154,673)	-	10.75%	157,993	-	157,993
Mt Pleasant School	0.248076%	2,599,397	1,438,971	3,509,668	2,599,397	1,833,832	154,688	(154,688)	-	10.75%	158,008	-	158,008
Munich School	0.129396%	1,355,841	750,564	1,830,636	1,355,841	956,524	80,685	(80,685)	-	10.75%	82,417	-	82,417
N Central Area Career And Tech Center	0.023760%	248,963	137,820	336,146	248,963	175,639	14,816	(14,816)	-	10.75%	15,134	-	15,134
Napoleon School	0.239705%	2,511,683	1,390,415	3,391,239	2,511,683	1,771,952	149,468	(149,468)	-	10.75%	152,677	-	152,677
Naughton Rural School	0.011294%	118,341	65,511	159,782	118,341	83,488	7,042	(7,042)	-	10.75%	7,194	-	7,194
Nd Center For Distance Education	0.151892%	1,591,559	881,057	2,148,900	1,591,559	1,122,819	94,712	(94,712)	-	10.75%	96,745	-	96,745
Nd Dept Of Public Instruction	0.018997%	199,055	110,191	268,761	199,055	140,430	11,846	(11,846)	-	10.75%	12,100	-	12,100
Nd School For Blind	0.110649%	1,159,405	641,824	1,565,412	1,159,405	817,942	68,995	(68,995)	-	10.75%	70,476	-	70,476
Nd School For Deaf	0.139941%	1,466,334	811,734	1,979,822	1,466,334	1,034,475	87,260	(87,260)	-	10.75%	89,133	-	89,133
Nd United	0.050592%	530,114	293,459	715,753	530,114	373,987	31,547	(31,547)	-	10.75%	32,224	-	32,224
Nd Youth Correctional Cnt	0.195046%	2,043,736	1,131,369	2,759,423	2,043,736	1,441,823	121,621	(121,621)	-	10.75%	124,232	-	124,232
Nedrose School	0.224405%	2,351,367	1,301,671	3,174,781	2,351,367	1,658,851	139,928	(139,928)	-	10.75%	142,932	-	142,932
Nelson County	0.001829%	19,165	10,607	25,876	19,165	13,520	1,140	(1,140)	-	10.75%	1,165	-	1,165
Nesson School	0.231647%	2,427,250	1,343,679	3,277,238	2,427,250	1,712,385	144,444	(144,444)	-	10.75%	147,544	-	147,544
New England School	0.187500%	1,964,668	1,087,601	2,652,666	1,964,668	1,386,041	116,916	(116,916)	-	10.75%	119,425	-	119,425
New Public School	0.343952%	3,604,007	1,995,103	4,866,078	3,604,007	2,542,569	214,472	(214,472)	-	10.75%	219,075	-	219,075

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2014

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)	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	0.280654%	2,940,756	1,627,943	3,970,567	2,940,756	2,074,656	175,002	(175,002)	-	10.75%	178,759	-	178,759
New Salem-Almont	0.266689%	2,794,428	1,546,941	3,772,996	2,794,428	1,971,424	166,294	(166,294)	-	10.75%	169,864	-	169,864
New Town School	0.651376%	6,825,266	3,778,325	9,215,375	6,825,266	4,815,114	406,166	(406,166)	-	10.75%	414,885	-	414,885
Newburg United District	0.100174%	1,049,646	581,064	1,417,217	1,049,646	740,508	62,464	(62,464)	-	10.75%	63,804	-	63,804
North Border School	0.456746%	4,785,888	2,649,367	6,461,837	4,785,888	3,376,366	284,805	(284,805)	-	10.75%	290,918	-	290,918
North Sargent School	0.204943%	2,147,439	1,188,780	2,899,442	2,147,439	1,514,984	127,793	(127,793)	-	10.75%	130,536	-	130,536
North Star	0.246313%	2,580,924	1,428,747	3,484,726	2,580,924	1,820,800	153,589	(153,589)	-	10.75%	156,886	-	156,886
North Valley Area Career	0.101309%	1,061,539	587,647	1,433,274	1,061,539	748,898	63,171	(63,171)	-	10.75%	64,527	-	64,527
Northern Cass School Dist	0.409839%	4,294,386	2,377,286	5,798,218	4,294,386	3,029,620	255,556	(255,556)	-	10.75%	261,041	-	261,041
Northern Plains Spec Ed	0.032412%	339,620	188,004	458,550	339,620	239,597	20,211	(20,211)	-	10.75%	20,644	-	20,644
Northwood School	0.223021%	2,336,865	1,293,641	3,155,201	2,336,865	1,648,620	139,065	(139,065)	-	10.75%	142,050	-	142,050
Oakes School	0.327620%	3,432,877	1,900,372	4,635,021	3,432,877	2,421,839	204,288	(204,288)	-	10.75%	208,673	-	208,673
Oberon Elem School	0.075449%	790,572	437,642	1,067,419	790,572	557,736	47,046	(47,046)	-	10.75%	48,056	-	48,056
Oliver - Mercer Spec Ed	0.147155%	1,541,924	853,576	2,081,883	1,541,924	1,087,802	91,759	(91,759)	-	10.75%	93,728	-	93,728
Page School	0.114957%	1,204,546	666,813	1,626,360	1,204,546	849,787	71,682	(71,682)	-	10.75%	73,220	-	73,220
Park River Area School District	0.343974%	3,604,238	1,995,232	4,866,390	3,604,238	2,542,731	214,485	(214,485)	-	10.75%	219,089	-	219,089
Parshall School	0.284323%	2,979,201	1,649,224	4,022,474	2,979,201	2,101,778	177,290	(177,290)	-	10.75%	181,096	-	181,096
Peace Garden Spec Ed	0.075491%	791,012	437,889	1,068,013	791,012	558,046	47,073	(47,073)	-	10.75%	48,083	-	48,083
Pembina Spec Ed Coop	0.028949%	303,334	167,922	409,557	303,334	213,997	18,051	(18,051)	-	10.75%	18,439	-	18,439
Pingree - Buchanan School	0.130916%	1,371,768	759,383	1,852,141	1,371,768	967,760	81,633	(81,633)	-	10.75%	83,385	-	83,385
Pleasant Valley Elem	0.002871%	30,083	16,653	40,618	30,083	21,223	1,790	(1,790)	-	10.75%	1,829	-	1,829
Powers Lake School	0.161801%	1,695,388	938,531	2,289,088	1,695,388	1,196,068	100,891	(100,891)	-	10.75%	103,057	-	103,057
Richardton-Taylor	0.266063%	2,787,869	1,543,307	3,764,140	2,787,869	1,966,796	165,904	(165,904)	-	10.75%	169,465	-	169,465
Richland School	0.259458%	2,718,660	1,504,994	3,670,695	2,718,660	1,917,970	161,785	(161,785)	-	10.75%	165,258	-	165,258
Robinson School	0.012175%	127,572	70,620	172,246	127,572	90,000	7,592	(7,592)	-	10.75%	7,755	-	7,755
Rolette County	0.000687%	7,199	3,984	9,719	7,199	5,078	428	(428)	-	10.75%	438	-	438
Rolette School	0.177208%	1,856,826	1,027,903	2,507,059	1,856,826	1,309,960	110,498	(110,498)	-	10.75%	112,870	-	112,870
Roosevelt School	0.065959%	691,133	382,597	933,158	691,133	487,583	41,129	(41,129)	-	10.75%	42,012	-	42,012
Roughrider Area Career And Tech Center	0.027540%	288,570	159,749	389,624	288,570	203,582	17,173	(17,173)	-	10.75%	17,541	-	17,541
Roughrider Service Program	0.015021%	157,393	87,133	212,510	157,393	111,039	9,366	(9,366)	-	10.75%	9,567	-	9,567
Rugby School	0.500720%	5,246,658	2,904,445	7,083,962	5,246,658	3,701,432	312,225	(312,225)	-	10.75%	318,927	-	318,927
Rural Cass Spec Ed	0.172379%	1,806,226	999,887	2,438,741	1,806,226	1,274,263	107,487	(107,487)	-	10.75%	109,794	-	109,794
Sargent Central School	0.228242%	2,391,572	1,323,924	3,229,065	2,391,572	1,687,215	142,321	(142,321)	-	10.75%	145,376	-	145,376
Sawyer School	0.137173%	1,437,330	795,679	1,940,662	1,437,330	1,014,013	85,534	(85,534)	-	10.75%	87,370	-	87,370
Scranton School	0.172604%	1,808,584	1,001,196	2,441,924	1,808,584	1,275,927	107,627	(107,627)	-	10.75%	109,938	-	109,938
Se Region Career And Tech	0.216803%	2,271,711	1,257,571	3,067,231	2,271,711	1,602,655	135,188	(135,188)	-	10.75%	138,090	-	138,090
Selfridge School	0.135399%	1,418,741	785,386	1,915,564	1,418,741	1,000,899	84,428	(84,428)	-	10.75%	86,240	-	86,240
Sheyenne Valley Area Voc	0.116189%	1,217,455	673,958	1,643,790	1,217,455	858,895	72,450	(72,450)	-	10.75%	74,005	-	74,005
Sheyenne Valley Spec Ed	0.255198%	2,674,023	1,480,286	3,610,427	2,674,023	1,886,480	159,129	(159,129)	-	10.75%	162,545	-	162,545
Slope County	0.003929%	41,169	22,792	55,586	41,169	29,044	2,450	(2,450)	-	10.75%	2,503	-	2,503
Solen - Cannonball School	0.283311%	2,968,597	1,643,353	4,008,157	2,968,597	2,094,297	176,659	(176,659)	-	10.75%	180,451	-	180,451
Souris Valley Spec Ed	0.252431%	2,645,029	1,464,235	3,571,280	2,645,029	1,866,025	157,404	(157,404)	-	10.75%	160,782	-	160,782
South Cent. Prairie Sp Ed	0.015964%	167,274	92,600	225,852	167,274	118,009	9,954	(9,954)	-	10.75%	10,168	-	10,168
South Heart School	0.212525%	2,226,885	1,232,757	3,006,708	2,226,885	1,571,031	132,520	(132,520)	-	10.75%	135,365	-	135,365
South Prairie Elem School	0.205494%	2,153,213	1,191,974	2,907,237	2,153,213	1,519,057	128,136	(128,136)	-	10.75%	130,886	-	130,886
South Valley Spec Ed	0.108350%	1,135,316	628,490	1,532,887	1,135,316	800,947	67,562	(67,562)	-	10.75%	69,012	-	69,012
Southwest Special Education Unit	0.010399%	108,963	60,320	147,120	108,963	76,872	6,484	(6,484)	-	10.75%	6,623	-	6,623
St. John'S School	0.391381%	4,100,979	2,270,215	5,537,083	4,100,979	2,893,174	244,046	(244,046)	-	10.75%	249,285	-	249,285
St. Thomas School	0.109436%	1,146,695	634,787	1,548,251	1,146,695	808,975	68,239	(68,239)	-	10.75%	69,704	-	69,704
Stanley School	0.484481%	5,076,502	2,810,250	6,854,220	5,076,502	3,581,390	302,099	(302,099)	-	10.75%	308,583	-	308,583
Starkweather School	0.095684%	1,002,599	555,020	1,353,694	1,002,599	707,317	59,664	(59,664)	-	10.75%	60,945	-	60,945
Sterling School	0.035357%	370,479	205,087	500,215	370,479	261,367	22,047	(22,047)	-	10.75%	22,520	-	22,520
Strasburg School District	0.140035%	1,467,319	812,275	1,981,152	1,467,319	1,035,169	87,319	(87,319)	-	10.75%	89,193	-	89,193
Surrey School	0.367937%	3,855,327	2,134,233	5,205,407	3,855,327	2,719,871	229,428	(229,428)	-	10.75%	234,352	-	234,352
Sweet Briar Elem School	0.012413%	130,066	72,000	175,614	130,066	91,760	7,740	(7,740)	-	10.75%	7,906	-	7,906
Tgu School District	0.430381%	4,509,630	2,496,437	6,088,837	4,509,630	3,181,471	268,365	(268,365)	-	10.75%	274,125	-	274,125
Thompson School	0.321196%	3,365,565	1,863,106	4,544,137	3,365,565	2,374,351	200,282	(200,282)	-	10.75%	204,581	-	204,581
Tioga School	0.404319%	4,236,546	2,345,263	5,720,124	4,236,546	2,988,815	252,114	(252,114)	-	10.75%	257,525	-	257,525
Turtle Lake-Mercer School	0.207853%	2,177,931	1,205,660	2,940,611	2,177,931	1,536,495	129,607	(129,607)	-	10.75%	132,389	-	132,389
Twin Buttes Elem. School	0.075974%	796,073	440,692	1,074,846	796,073	561,616	47,374	(47,374)	-	10.75%	48,391	-	48,391
Underwood School	0.245590%	2,573,348	1,424,552	3,474,497	2,573,348	1,815,455	153,138	(153,138)	-	10.75%	156,425	-	156,425
United School	0.477723%	5,005,690	2,771,048	6,758,610	5,005,690	3,531,433	297,885	(297,885)	-	10.75%	304,279	-	304,279
Upper Valley Spec Ed	0.363934%	3,813,383	2,111,013	5,148,775	3,813,383	2,690,280	226,932	(226,932)	-	10.75%	231,803	-	231,803
Valley - Edinburg School	0.241673%	2,532,305	1,401,830	3,419,081	2,532,305	1,786,500	150,696	(150,696)	-	10.75%	153,930	-	153,930
Valley City School	1.004128%	10,521,481	5,824,480	14,205,952	10,521,481	7,422,734	626,125	(626,125)	-	10.75%	639,565	-	639,565
Velva School	0.399296%	4,183,914	2,316,129	5,649,060	4,183,914	2,951,684	248,982	(248,982)	-	10.75%	254,326	-	254,326
Wahpeton School	1.074754%	11,261,517	6,234,148	15,205,137	11,261,517	7,944,817	670,164	(670,164)	-	10.75%	684,549	-	684,549
Ward County	0.004488%	47,026	26,031	63,494	47,026	33,176	2,798	(2,798)	-	10.75%	2,859	-	2,859

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2014

				Discount Rate Sensitivity			Schedule of Contributions				Pension Expense		
Employer Name	**Employer's Proportionate Share Allocation**	**Net Pension Liability**	**Covered Employee Payroll**	**1% Decrease (7.00%)**	**Current Discount Rate (8.00%)**	**1% Increase (9.00%)**	**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)**
Warwick School	0.262441%	2,749,916	1,522,299	3,712,897	2,749,916	1,940,021	163,645	(163,645)	-	10.75%	167,158	-	167,158
Washburn School	0.246342%	2,581,227	1,428,913	3,485,136	2,581,227	1,821,014	153,607	(153,607)	-	10.75%	156,904	-	156,904
West Fargo School	7.495843%	78,543,146	43,479,882	106,047,820	78,543,146	55,410,914	4,674,044	(4,674,044)	-	10.75%	4,774,371	-	4,774,371
West River Student Services	0.099513%	1,042,720	577,229	1,407,865	1,042,720	735,622	62,051	(62,051)	-	10.75%	63,383	-	63,383
Westhope School	0.161311%	1,690,253	935,687	2,282,156	1,690,253	1,192,446	100,586	(100,586)	-	10.75%	102,745	-	102,745
White Shield School	0.236328%	2,476,298	1,370,831	3,343,462	2,476,298	1,746,988	147,363	(147,363)	-	10.75%	150,526	-	150,526
Williston School	2.393571%	25,080,381	13,883,985	33,863,167	25,080,381	17,693,801	1,492,515	(1,492,515)	-	10.75%	1,524,551	-	1,524,551
Wilmac Special Education	0.425139%	4,454,703	2,466,035	6,014,676	4,454,703	3,142,721	265,096	(265,096)	-	10.75%	270,786	-	270,786
Wilton School	0.195459%	2,048,064	1,133,768	2,765,266	2,048,064	1,444,876	121,879	(121,879)	-	10.75%	124,495	-	124,495
Wing School	0.108458%	1,136,448	629,112	1,534,415	1,136,448	801,745	67,629	(67,629)	-	10.75%	69,081	-	69,081
Wishek School	0.188025%	1,970,169	1,090,646	2,660,093	1,970,169	1,389,922	117,243	(117,243)	-	10.75%	119,760	-	119,760
Wolford School	0.078990%	827,675	458,187	1,117,515	827,675	583,911	49,254	(49,254)	-	10.75%	50,312	-	50,312
Wyndmere School	0.235320%	2,465,736	1,364,980	3,329,202	2,465,736	1,739,537	146,734	(146,734)	-	10.75%	149,884	-	149,884
Yellowstone Elem. School	0.079419%	832,170	460,673	1,123,584	832,170	587,083	49,522	(49,522)	-	10.75%	50,585	-	50,585
Zeeland School	0.077000%	806,823	446,642	1,089,361	806,823	569,201	48,013	(48,013)	-	10.75%	49,044	-	49,044
Grand Totals:	**100%**	**1,047,822,708**	**580,053,235**	**1,414,755,068**	**1,047,822,708**	**739,221,903**	**62,355,140**	**(62,355,140)**	**-**	**10.75%**	**63,693,590**	**-**	**63,693,590**

Note: Columns may not foot due to rounding.

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2014

	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	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	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 Inflows of Resources	2015	2016	2017	2018	2019	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Alexander School	$ 11,477	$ -	$ -	$ 11,477	$ -	$ 170,512	$ -	$ -	$ 170,512	$ (40,715)	$ (40,715)	$ (40,715)	$ (40,715)	$ 1,913	$ 1,913
Anamoose School	8,547	-	-	8,547	-	126,981	-	-	126,981	(30,321)	(30,321)	(30,321)	(30,321)	1,424	1,424
Apple Creek Elem School	4,675	-	-	4,675	-	69,457	-	-	69,457	(16,585)	(16,585)	(16,585)	(16,585)	779	779
Ashley School	12,116	-	-	12,116	-	180,002	-	-	180,002	(42,981)	(42,981)	(42,981)	(42,981)	2,019	2,019
Bakker Elem School	463	-	-	463	-	6,874	-	-	6,874	(1,641)	(1,641)	(1,641)	(1,641)	77	77
Barnes County North	23,224	-	-	23,224	-	345,035	-	-	345,035	(82,388)	(82,388)	(82,388)	(82,388)	3,871	3,871
Beach School	28,408	-	-	28,408	-	422,058	-	-	422,058	(100,780)	(100,780)	(100,780)	(100,780)	4,735	4,735
Belcourt School	107,511	-	-	107,511	-	1,597,300	-	-	1,597,300	(381,406)	(381,406)	(381,406)	(381,406)	17,918	17,918
Belfield Public School	17,555	-	-	17,555	-	260,821	-	-	260,821	(62,279)	(62,279)	(62,279)	(62,279)	2,926	2,926
Beulah School	44,660	-	-	44,660	-	663,521	-	-	663,521	(158,437)	(158,437)	(158,437)	(158,437)	7,443	7,443
Billings Co. School Dist.	10,090	-	-	10,090	-	149,909	-	-	149,909	(35,796)	(35,796)	(35,796)	(35,796)	1,682	1,682
Bismarck Public Schools	852,639	-	-	852,639	-	12,667,724	-	-	12,667,724	(3,024,825)	(3,024,825)	(3,024,825)	(3,024,825)	142,106	142,106
Bismarck State College	432	-	-	432	-	6,421	-	-	6,421	(1,533)	(1,533)	(1,533)	(1,533)	72	72
Blessed John Paul Ii Catholic Sch Network	422	-	-	422	-	6,276	-	-	6,276	(1,498)	(1,498)	(1,498)	(1,498)	70	70
Bottineau School	48,585	-	-	48,585	-	721,829	-	-	721,829	(172,360)	(172,360)	(172,360)	(172,360)	8,097	8,097
Bowbells School	6,997	-	-	6,997	-	103,953	-	-	103,953	(24,822)	(24,822)	(24,822)	(24,822)	1,166	1,166
Bowman School	35,750	-	-	35,750	-	531,133	-	-	531,133	(126,825)	(126,825)	(126,825)	(126,825)	5,958	5,958
Burke Central School	11,532	-	-	11,532	-	171,327	-	-	171,327	(40,910)	(40,910)	(40,910)	(40,910)	1,922	1,922
Burleigh County Spec. Ed.	931	-	-	931	-	13,837	-	-	13,837	(3,304)	(3,304)	(3,304)	(3,304)	155	155
Carrington School	36,636	-	-	36,636	-	544,301	-	-	544,301	(129,969)	(129,969)	(129,969)	(129,969)	6,106	6,106
Cavalier School	27,284	-	-	27,284	-	405,366	-	-	405,366	(96,794)	(96,794)	(96,794)	(96,794)	4,547	4,547
Center Stanton School	18,217	-	-	18,217	-	270,651	-	-	270,651	(64,627)	(64,627)	(64,627)	(64,627)	3,036	3,036
Central Cass School	45,841	-	-	45,841	-	681,059	-	-	681,059	(162,625)	(162,625)	(162,625)	(162,625)	7,640	7,640
Central Elementary School	838	-	-	838	-	12,451	-	-	12,451	(2,973)	(2,973)	(2,973)	(2,973)	140	140
Central Valley School	16,762	-	-	16,762	-	249,035	-	-	249,035	(59,465)	(59,465)	(59,465)	(59,465)	2,794	2,794
Dakota Prairie School	22,681	-	-	22,681	-	336,974	-	-	336,974	(80,463)	(80,463)	(80,463)	(80,463)	3,780	3,780
Devils Lake School	137,028	-	-	137,028	-	2,035,842	-	-	2,035,842	(486,122)	(486,122)	(486,122)	(486,122)	22,838	22,838
Dickinson School	207,921	-	-	207,921	-	3,089,096	-	-	3,089,096	(737,621)	(737,621)	(737,621)	(737,621)	34,653	34,653
Divide School	29,749	-	-	29,749	-	441,990	-	-	441,990	(105,539)	(105,539)	(105,539)	(105,539)	4,958	4,958
Drake School	7,340	-	-	7,340	-	109,056	-	-	109,056	(26,041)	(26,041)	(26,041)	(26,041)	1,223	1,223
Drayton School	14,825	-	-	14,825	-	220,255	-	-	220,255	(52,593)	(52,593)	(52,593)	(52,593)	2,471	2,471
Dunseith School	33,393	-	-	33,393	-	496,129	-	-	496,129	(118,467)	(118,467)	(118,467)	(118,467)	5,566	5,566
E Central Ctr Exc Childn	10,404	-	-	10,404	-	154,573	-	-	154,573	(36,909)	(36,909)	(36,909)	(36,909)	1,734	1,734
Earl Elem. School	421	-	-	421	-	6,259	-	-	6,259	(1,495)	(1,495)	(1,495)	(1,495)	70	70
Edgeley School	16,016	-	-	16,016	-	237,946	-	-	237,946	(56,817)	(56,817)	(56,817)	(56,817)	2,669	2,669
Edmore School	8,789	-	-	8,789	-	130,580	-	-	130,580	(31,180)	(31,180)	(31,180)	(31,180)	1,465	1,465
Eight Mile School	16,504	-	-	16,504	-	245,197	-	-	245,197	(58,549)	(58,549)	(58,549)	(58,549)	2,751	2,751
Elgin-New Leipzig School	13,216	-	-	13,216	-	196,348	-	-	196,348	(46,884)	(46,884)	(46,884)	(46,884)	2,203	2,203
Ellendale School	23,548	-	-	23,548	-	349,857	-	-	349,857	(83,540)	(83,540)	(83,540)	(83,540)	3,925	3,925
Emerado Elementary School	7,358	-	-	7,358	-	109,317	-	-	109,317	(26,103)	(26,103)	(26,103)	(26,103)	1,226	1,226
Enderlin Area School District	24,839	-	-	24,839	-	369,028	-	-	369,028	(88,117)	(88,117)	(88,117)	(88,117)	4,140	4,140
Fairmount School	12,962	-	-	12,962	-	192,575	-	-	192,575	(45,983)	(45,983)	(45,983)	(45,983)	2,160	2,160
Fargo Public Schools	872,853	-	-	872,853	-	12,968,047	-	-	12,968,047	(3,096,536)	(3,096,536)	(3,096,536)	(3,096,536)	145,475	145,475
Fessenden-Bowdon School	12,298	-	-	12,298	-	182,712	-	-	182,712	(43,628)	(43,628)	(43,628)	(43,628)	2,050	2,050
Finley-Sharon School	15,049	-	-	15,049	-	223,582	-	-	223,582	(53,387)	(53,387)	(53,387)	(53,387)	2,508	2,508
Flasher School	14,523	-	-	14,523	-	215,768	-	-	215,768	(51,521)	(51,521)	(51,521)	(51,521)	2,420	2,420
Fordville Lankin School	7,501	-	-	7,501	-	111,441	-	-	111,441	(26,610)	(26,610)	(26,610)	(26,610)	1,250	1,250
Fort Ransom Elem School	2,098	-	-	2,098	-	31,163	-	-	31,163	(7,441)	(7,441)	(7,441)	(7,441)	350	350
Fort Totten School	21,104	-	-	21,104	-	313,546	-	-	313,546	(74,869)	(74,869)	(74,869)	(74,869)	3,517	3,517
Fort Yates School	14,038	-	-	14,038	-	208,558	-	-	208,558	(49,800)	(49,800)	(49,800)	(49,800)	2,340	2,340
Gackle-Streeter Pub Sch	9,869	-	-	9,869	-	146,621	-	-	146,621	(35,011)	(35,011)	(35,011)	(35,011)	1,645	1,645
Garrison School	28,142	-	-	28,142	-	418,105	-	-	418,105	(99,836)	(99,836)	(99,836)	(99,836)	4,690	4,690
Glen Ullin School	13,648	-	-	13,648	-	202,768	-	-	202,768	(48,417)	(48,417)	(48,417)	(48,417)	2,275	2,275
Glenburn School	20,592	-	-	20,592	-	305,936	-	-	305,936	(73,052)	(73,052)	(73,052)	(73,052)	3,432	3,432
Goodrich School	3,823	-	-	3,823	-	56,796	-	-	56,796	(13,562)	(13,562)	(13,562)	(13,562)	637	637
Grafton School	55,159	-	-	55,159	-	819,497	-	-	819,497	(195,681)	(195,681)	(195,681)	(195,681)	9,193	9,193
Grand Forks School	576,501	-	-	576,501	-	8,565,127	-	-	8,565,127	(2,045,198)	(2,045,198)	(2,045,198)	(2,045,198)	96,084	96,084
Great North West Cooperative	1,767	-	-	1,767	-	26,257	-	-	26,257	(6,270)	(6,270)	(6,270)	(6,270)	295	295
Grenora School	13,395	-	-	13,395	-	199,011	-	-	199,011	(47,520)	(47,520)	(47,520)	(47,520)	2,233	2,233
Griggs County Central Sch	23,313	-	-	23,313	-	346,359	-	-	346,359	(82,704)	(82,704)	(82,704)	(82,704)	3,885	3,885
Gst Educational Services	19,953	-	-	19,953	-	296,447	-	-	296,447	(70,786)	(70,786)	(70,786)	(70,786)	3,326	3,326
Halliday School	5,726	-	-	5,726	-	85,070	-	-	85,070	(20,313)	(20,313)	(20,313)	(20,313)	954	954
Hankinson School	21,461	-	-	21,461	-	318,852	-	-	318,852	(76,136)	(76,136)	(76,136)	(76,136)	3,577	3,577
Harvey School	28,833	-	-	28,833	-	428,379	-	-	428,379	(102,289)	(102,289)	(102,289)	(102,289)	4,806	4,806
Hatton Eielson Psd	14,576	-	-	14,576	-	216,557	-	-	216,557	(51,710)	(51,710)	(51,710)	(51,710)	2,429	2,429
Hazelton - Moffit School	10,563	-	-	10,563	-	156,937	-	-	156,937	(37,474)	(37,474)	(37,474)	(37,474)	1,761	1,761
Hazen School	35,615	-	-	35,615	-	529,136	-	-	529,136	(126,348)	(126,348)	(126,348)	(126,348)	5,936	5,936
Hebron School	15,068	-	-	15,068	-	223,865	-	-	223,865	(53,455)	(53,455)	(53,455)	(53,455)	2,511	2,511

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2014

	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	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	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 Inflows of Resources	2015	2016	2017	2018	2019	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Hettinger School	21,202	-	-	21,202	-	314,994	-	-	314,994	(75,215)	(75,215)	(75,215)	(75,215)	3,534	3,534
Hillsboro School	29,285	-	-	29,285	-	435,091	-	-	435,091	(103,892)	(103,892)	(103,892)	(103,892)	4,881	4,881
Hope School	8,139	-	-	8,139	-	120,917	-	-	120,917	(28,873)	(28,873)	(28,873)	(28,873)	1,356	1,356
Horse Creek Elem. School	477	-	-	477	-	7,080	-	-	7,080	(1,691)	(1,691)	(1,691)	(1,691)	79	79
James River Multidistrict Spec Ed Unit	15,649	-	-	15,649	-	232,502	-	-	232,502	(55,517)	(55,517)	(55,517)	(55,517)	2,608	2,608
Jamestown School	173,869	-	-	173,869	-	2,583,183	-	-	2,583,183	(616,818)	(616,818)	(616,818)	(616,818)	28,978	28,978
Kenmare School	23,540	-	-	23,540	-	349,735	-	-	349,735	(83,510)	(83,510)	(83,510)	(83,510)	3,923	3,923
Kensal School	5,175	-	-	5,175	-	76,880	-	-	76,880	(18,358)	(18,358)	(18,358)	(18,358)	862	862
Kidder County School District	29,411	-	-	29,411	-	436,959	-	-	436,959	(104,338)	(104,338)	(104,338)	(104,338)	4,902	4,902
Killdeer School	32,079	-	-	32,079	-	476,596	-	-	476,596	(113,803)	(113,803)	(113,803)	(113,803)	5,346	5,346
Kindred School	40,433	-	-	40,433	-	600,717	-	-	600,717	(143,440)	(143,440)	(143,440)	(143,440)	6,739	6,739
Kulm School	14,168	-	-	14,168	-	210,491	-	-	210,491	(50,261)	(50,261)	(50,261)	(50,261)	2,361	2,361
Lake Region Spec Ed	23,154	-	-	23,154	-	344,001	-	-	344,001	(82,141)	(82,141)	(82,141)	(82,141)	3,859	3,859
Lakota School	15,706	-	-	15,706	-	233,344	-	-	233,344	(55,718)	(55,718)	(55,718)	(55,718)	2,618	2,618
Lamoure School	19,319	-	-	19,319	-	287,027	-	-	287,027	(68,537)	(68,537)	(68,537)	(68,537)	3,220	3,220
Langdon Area School	26,995	-	-	26,995	-	401,067	-	-	401,067	(95,768)	(95,768)	(95,768)	(95,768)	4,499	4,499
Larimore School	28,563	-	-	28,563	-	424,368	-	-	424,368	(101,332)	(101,332)	(101,332)	(101,332)	4,761	4,761
Leeds School	13,817	-	-	13,817	-	205,280	-	-	205,280	(49,017)	(49,017)	(49,017)	(49,017)	2,303	2,303
Lewis And Clark School	32,534	-	-	32,534	-	483,365	-	-	483,365	(115,419)	(115,419)	(115,419)	(115,419)	5,422	5,422
Lidgerwood School	14,983	-	-	14,983	-	222,602	-	-	222,602	(53,153)	(53,153)	(53,153)	(53,153)	2,497	2,497
Linton School	21,823	-	-	21,823	-	324,227	-	-	324,227	(77,419)	(77,419)	(77,419)	(77,419)	3,637	3,637
Lisbon School	44,433	-	-	44,433	-	660,147	-	-	660,147	(157,631)	(157,631)	(157,631)	(157,631)	7,406	7,406
Litchville-Marion School	11,146	-	-	11,146	-	165,596	-	-	165,596	(39,541)	(39,541)	(39,541)	(39,541)	1,858	1,858
Little Heart Elem. School	1,297	-	-	1,297	-	19,263	-	-	19,263	(4,600)	(4,600)	(4,600)	(4,600)	216	216
Logan County	55	-	-	55	-	819	-	-	819	(196)	(196)	(196)	(196)	9	9
Lone Tree Elem. School	2,682	-	-	2,682	-	39,852	-	-	39,852	(9,516)	(9,516)	(9,516)	(9,516)	447	447
Lonetree Spec Ed Unit	1,907	-	-	1,907	-	28,340	-	-	28,340	(6,767)	(6,767)	(6,767)	(6,767)	318	318
Maddock School	12,663	-	-	12,663	-	188,142	-	-	188,142	(44,925)	(44,925)	(44,925)	(44,925)	2,111	2,111
Mandan Public Schools	226,002	-	-	226,002	-	3,357,731	-	-	3,357,731	(801,766)	(801,766)	(801,766)	(801,766)	37,667	37,667
Mandaree School	22,142	-	-	22,142	-	328,963	-	-	328,963	(78,550)	(78,550)	(78,550)	(78,550)	3,690	3,690
Manning Elem School	936	-	-	936	-	13,904	-	-	13,904	(3,320)	(3,320)	(3,320)	(3,320)	156	156
Manvel Elem. School	10,140	-	-	10,140	-	150,651	-	-	150,651	(35,973)	(35,973)	(35,973)	(35,973)	1,690	1,690
Maple Valley School	21,202	-	-	21,202	-	315,005	-	-	315,005	(75,218)	(75,218)	(75,218)	(75,218)	3,534	3,534
Mapleton Elem. School	8,631	-	-	8,631	-	128,228	-	-	128,228	(30,619)	(30,619)	(30,619)	(30,619)	1,438	1,438
Marmarth Elem. School	2,104	-	-	2,104	-	31,256	-	-	31,256	(7,463)	(7,463)	(7,463)	(7,463)	351	351
Max School	14,702	-	-	14,702	-	218,435	-	-	218,435	(52,158)	(52,158)	(52,158)	(52,158)	2,450	2,450
May-Port C-G School	33,416	-	-	33,416	-	496,464	-	-	496,464	(118,547)	(118,547)	(118,547)	(118,547)	5,569	5,569
Mcclusky School	10,084	-	-	10,084	-	149,821	-	-	149,821	(35,775)	(35,775)	(35,775)	(35,775)	1,681	1,681
Mckenzie County	718	-	-	718	-	10,671	-	-	10,671	(2,548)	(2,548)	(2,548)	(2,548)	120	120
Mckenzie County School	61,485	-	-	61,485	-	913,488	-	-	913,488	(218,125)	(218,125)	(218,125)	(218,125)	10,248	10,248
Medina School	12,640	-	-	12,640	-	187,793	-	-	187,793	(44,842)	(44,842)	(44,842)	(44,842)	2,107	2,107
Menoken Elem School	1,601	-	-	1,601	-	23,784	-	-	23,784	(5,679)	(5,679)	(5,679)	(5,679)	267	267
Midkota	13,820	-	-	13,820	-	205,319	-	-	205,319	(49,026)	(49,026)	(49,026)	(49,026)	2,303	2,303
Midway School	18,417	-	-	18,417	-	273,626	-	-	273,626	(65,337)	(65,337)	(65,337)	(65,337)	3,070	3,070
Milnor School	19,252	-	-	19,252	-	286,032	-	-	286,032	(68,299)	(68,299)	(68,299)	(68,299)	3,209	3,209
Minnewaukan School	22,290	-	-	22,290	-	331,162	-	-	331,162	(79,075)	(79,075)	(79,075)	(79,075)	3,715	3,715
Minot School	553,785	-	-	553,785	-	8,227,621	-	-	8,227,621	(1,964,608)	(1,964,608)	(1,964,608)	(1,964,608)	92,297	92,297
Minto School	14,714	-	-	14,714	-	218,606	-	-	218,606	(52,199)	(52,199)	(52,199)	(52,199)	2,452	2,452
Mohall Lansford Sherwood	30,597	-	-	30,597	-	454,588	-	-	454,588	(108,547)	(108,547)	(108,547)	(108,547)	5,100	5,100
Montpelier School	9,096	-	-	9,096	-	135,146	-	-	135,146	(32,271)	(32,271)	(32,271)	(32,271)	1,516	1,516
Morton County	357	-	-	357	-	5,311	-	-	5,311	(1,268)	(1,268)	(1,268)	(1,268)	60	60
Mott-Regent School	19,874	-	-	19,874	-	295,269	-	-	295,269	(70,505)	(70,505)	(70,505)	(70,505)	3,312	3,312
Mt Pleasant School	19,876	-	-	19,876	-	295,297	-	-	295,297	(70,512)	(70,512)	(70,512)	(70,512)	3,313	3,313
Munich School	10,367	-	-	10,367	-	154,027	-	-	154,027	(36,779)	(36,779)	(36,779)	(36,779)	1,728	1,728
N Central Area Career And Tech Center	1,904	-	-	1,904	-	28,283	-	-	28,283	(6,753)	(6,753)	(6,753)	(6,753)	317	317
Napoleon School	19,205	-	-	19,205	-	285,333	-	-	285,333	(68,132)	(68,132)	(68,132)	(68,132)	3,201	3,201
Naughton Rural School	905	-	-	905	-	13,444	-	-	13,444	(3,210)	(3,210)	(3,210)	(3,210)	151	151
Nd Center For Distance Education	12,170	-	-	12,170	-	180,805	-	-	180,805	(43,173)	(43,173)	(43,173)	(43,173)	2,028	2,028
Nd Dept Of Public Instruction	1,522	-	-	1,522	-	22,613	-	-	22,613	(5,400)	(5,400)	(5,400)	(5,400)	254	254
Nd School For Blind	8,865	-	-	8,865	-	131,711	-	-	131,711	(31,450)	(31,450)	(31,450)	(31,450)	1,478	1,478
Nd School For Deaf	11,212	-	-	11,212	-	166,579	-	-	166,579	(39,776)	(39,776)	(39,776)	(39,776)	1,869	1,869
Nd United	4,053	-	-	4,053	-	60,222	-	-	60,222	(14,380)	(14,380)	(14,380)	(14,380)	676	676
Nd Youth Correctional Cnt	15,627	-	-	15,627	-	232,173	-	-	232,173	(55,439)	(55,439)	(55,439)	(55,439)	2,605	2,605
Nedrose School	17,979	-	-	17,979	-	267,121	-	-	267,121	(63,784)	(63,784)	(63,784)	(63,784)	2,997	2,997
Nelson County	147	-	-	147	-	2,177	-	-	2,177	(520)	(520)	(520)	(520)	24	24
Nesson School	18,560	-	-	18,560	-	275,741	-	-	275,741	(65,842)	(65,842)	(65,842)	(65,842)	3,093	3,093
New England School	15,023	-	-	15,023	-	223,191	-	-	223,191	(53,294)	(53,294)	(53,294)	(53,294)	2,504	2,504
New Public School	27,557	-	-	27,557	-	409,424	-	-	409,424	(97,763)	(97,763)	(97,763)	(97,763)	4,593	4,593

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2014

	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	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	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 Inflows of Resources	2015	2016	2017	2018	2019	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
New Rockford Sheyenne School	22,486	-	-	22,486	-	334,077	-	-	334,077	(79,772)	(79,772)	(79,772)	(79,772)	3,748	3,748
New Salem-Almont	21,367	-	-	21,367	-	317,453	-	-	317,453	(75,802)	(75,802)	(75,802)	(75,802)	3,561	3,561
New Town School	52,188	-	-	52,188	-	775,366	-	-	775,366	(185,143)	(185,143)	(185,143)	(185,143)	8,698	8,698
Newburg United District	8,026	-	-	8,026	-	119,242	-	-	119,242	(28,473)	(28,473)	(28,473)	(28,473)	1,338	1,338
North Border School	36,595	-	-	36,595	-	543,688	-	-	543,688	(129,823)	(129,823)	(129,823)	(129,823)	6,099	6,099
North Sargent School	16,420	-	-	16,420	-	243,954	-	-	243,954	(58,252)	(58,252)	(58,252)	(58,252)	2,737	2,737
North Star	19,735	-	-	19,735	-	293,199	-	-	293,199	(70,011)	(70,011)	(70,011)	(70,011)	3,289	3,289
North Valley Area Career	8,117	-	-	8,117	-	120,593	-	-	120,593	(28,796)	(28,796)	(28,796)	(28,796)	1,353	1,353
Northern Cass School Dist	32,836	-	-	32,836	-	487,852	-	-	487,852	(116,490)	(116,490)	(116,490)	(116,490)	5,473	5,473
Northern Plains Spec Ed	2,597	-	-	2,597	-	38,582	-	-	38,582	(9,213)	(9,213)	(9,213)	(9,213)	433	433
Northwood School	17,868	-	-	17,868	-	265,473	-	-	265,473	(63,390)	(63,390)	(63,390)	(63,390)	2,978	2,978
Oakes School	26,249	-	-	26,249	-	389,983	-	-	389,983	(93,121)	(93,121)	(93,121)	(93,121)	4,375	4,375
Oberon Elem School	6,045	-	-	6,045	-	89,811	-	-	89,811	(21,445)	(21,445)	(21,445)	(21,445)	1,007	1,007
Oliver - Mercer Spec Ed	11,790	-	-	11,790	-	175,166	-	-	175,166	(41,827)	(41,827)	(41,827)	(41,827)	1,965	1,965
Page School	9,210	-	-	9,210	-	136,839	-	-	136,839	(32,675)	(32,675)	(32,675)	(32,675)	1,535	1,535
Park River Area School District	27,559	-	-	27,559	-	409,450	-	-	409,450	(97,769)	(97,769)	(97,769)	(97,769)	4,593	4,593
Parshall School	22,780	-	-	22,780	-	338,444	-	-	338,444	(80,814)	(80,814)	(80,814)	(80,814)	3,797	3,797
Peace Garden Spec Ed	6,048	-	-	6,048	-	89,861	-	-	89,861	(21,457)	(21,457)	(21,457)	(21,457)	1,008	1,008
Pembina Spec Ed Coop	2,319	-	-	2,319	-	34,459	-	-	34,459	(8,228)	(8,228)	(8,228)	(8,228)	387	387
Pingree - Buchanan School	10,489	-	-	10,489	-	155,836	-	-	155,836	(37,211)	(37,211)	(37,211)	(37,211)	1,748	1,748
Pleasant Valley Elem	230	-	-	230	-	3,417	-	-	3,417	(816)	(816)	(816)	(816)	38	38
Powers Lake School	12,964	-	-	12,964	-	192,600	-	-	192,600	(45,989)	(45,989)	(45,989)	(45,989)	2,161	2,161
Richardton-Taylor	21,317	-	-	21,317	-	316,708	-	-	316,708	(75,624)	(75,624)	(75,624)	(75,624)	3,553	3,553
Richland School	20,788	-	-	20,788	-	308,846	-	-	308,846	(73,747)	(73,747)	(73,747)	(73,747)	3,465	3,465
Robinson School	975	-	-	975	-	14,493	-	-	14,493	(3,461)	(3,461)	(3,461)	(3,461)	163	163
Rolette County	55	-	-	55	-	818	-	-	818	(195)	(195)	(195)	(195)	9	9
Rolette School	14,198	-	-	14,198	-	210,940	-	-	210,940	(50,369)	(50,369)	(50,369)	(50,369)	2,366	2,366
Roosevelt School	5,285	-	-	5,285	-	78,514	-	-	78,514	(18,748)	(18,748)	(18,748)	(18,748)	881	881
Roughrider Area Career And Tech Center	2,207	-	-	2,207	-	32,782	-	-	32,782	(7,828)	(7,828)	(7,828)	(7,828)	368	368
Roughrider Service Program	1,203	-	-	1,203	-	17,880	-	-	17,880	(4,269)	(4,269)	(4,269)	(4,269)	201	201
Rugby School	40,118	-	-	40,118	-	596,033	-	-	596,033	(142,322)	(142,322)	(142,322)	(142,322)	6,686	6,686
Rural Cass Spec Ed	13,811	-	-	13,811	-	205,192	-	-	205,192	(48,996)	(48,996)	(48,996)	(48,996)	2,302	2,302
Sargent Central School	18,287	-	-	18,287	-	271,688	-	-	271,688	(64,874)	(64,874)	(64,874)	(64,874)	3,048	3,048
Sawyer School	10,990	-	-	10,990	-	163,284	-	-	163,284	(38,989)	(38,989)	(38,989)	(38,989)	1,832	1,832
Scranton School	13,829	-	-	13,829	-	205,459	-	-	205,459	(49,060)	(49,060)	(49,060)	(49,060)	2,305	2,305
Se Region Career And Tech	17,370	-	-	17,370	-	258,072	-	-	258,072	(61,623)	(61,623)	(61,623)	(61,623)	2,895	2,895
Selfridge School	10,848	-	-	10,848	-	161,172	-	-	161,172	(38,485)	(38,485)	(38,485)	(38,485)	1,808	1,808
Sheyenne Valley Area Voc	9,309	-	-	9,309	-	138,306	-	-	138,306	(33,025)	(33,025)	(33,025)	(33,025)	1,552	1,552
Sheyenne Valley Spec Ed	20,446	-	-	20,446	-	303,775	-	-	303,775	(72,536)	(72,536)	(72,536)	(72,536)	3,408	3,408
Slope County	315	-	-	315	-	4,677	-	-	4,677	(1,117)	(1,117)	(1,117)	(1,117)	52	52
Solen - Cannonball School	22,699	-	-	22,699	-	337,240	-	-	337,240	(80,527)	(80,527)	(80,527)	(80,527)	3,783	3,783
Souris Valley Spec Ed	20,225	-	-	20,225	-	300,481	-	-	300,481	(71,750)	(71,750)	(71,750)	(71,750)	3,371	3,371
South Cent. Prairie Sp Ed	1,279	-	-	1,279	-	19,003	-	-	19,003	(4,538)	(4,538)	(4,538)	(4,538)	213	213
South Heart School	17,028	-	-	17,028	-	252,979	-	-	252,979	(60,407)	(60,407)	(60,407)	(60,407)	2,838	2,838
South Prairie Elem School	16,464	-	-	16,464	-	244,610	-	-	244,610	(58,408)	(58,408)	(58,408)	(58,408)	2,744	2,744
South Valley Spec Ed	8,681	-	-	8,681	-	128,975	-	-	128,975	(30,797)	(30,797)	(30,797)	(30,797)	1,447	1,447
Southwest Special Education Unit	833	-	-	833	-	12,378	-	-	12,378	(2,956)	(2,956)	(2,956)	(2,956)	139	139
St. John'S School	31,357	-	-	31,357	-	465,881	-	-	465,881	(111,244)	(111,244)	(111,244)	(111,244)	5,226	5,226
St. Thomas School	8,768	-	-	8,768	-	130,267	-	-	130,267	(31,105)	(31,105)	(31,105)	(31,105)	1,461	1,461
Stanley School	38,817	-	-	38,817	-	576,702	-	-	576,702	(137,706)	(137,706)	(137,706)	(137,706)	6,469	6,469
Starkweather School	7,666	-	-	7,666	-	113,898	-	-	113,898	(27,197)	(27,197)	(27,197)	(27,197)	1,278	1,278
Sterling School	2,833	-	-	2,833	-	42,087	-	-	42,087	(10,050)	(10,050)	(10,050)	(10,050)	472	472
Strasburg School District	11,220	-	-	11,220	-	166,691	-	-	166,691	(39,803)	(39,803)	(39,803)	(39,803)	1,870	1,870
Surrey School	29,479	-	-	29,479	-	437,974	-	-	437,974	(104,580)	(104,580)	(104,580)	(104,580)	4,913	4,913
Sweet Briar Elem School	995	-	-	995	-	14,776	-	-	14,776	(3,528)	(3,528)	(3,528)	(3,528)	166	166
Tgu School District	34,482	-	-	34,482	-	512,304	-	-	512,304	(122,329)	(122,329)	(122,329)	(122,329)	5,747	5,747
Thompson School	25,734	-	-	25,734	-	382,336	-	-	382,336	(91,295)	(91,295)	(91,295)	(91,295)	4,289	4,289
Tioga School	32,394	-	-	32,394	-	481,281	-	-	481,281	(114,921)	(114,921)	(114,921)	(114,921)	5,399	5,399
Turtle Lake-Mercer School	16,653	-	-	16,653	-	247,418	-	-	247,418	(59,079)	(59,079)	(59,079)	(59,079)	2,776	2,776
Twin Buttes Elem. School	6,087	-	-	6,087	-	90,436	-	-	90,436	(21,594)	(21,594)	(21,594)	(21,594)	1,015	1,015
Underwood School	19,677	-	-	19,677	-	292,338	-	-	292,338	(69,805)	(69,805)	(69,805)	(69,805)	3,279	3,279
United School	38,275	-	-	38,275	-	568,658	-	-	568,658	(135,785)	(135,785)	(135,785)	(135,785)	6,379	6,379
Upper Valley Spec Ed	29,158	-	-	29,158	-	433,209	-	-	433,209	(103,443)	(103,443)	(103,443)	(103,443)	4,860	4,860
Valley - Edinburg School	19,363	-	-	19,363	-	287,676	-	-	287,676	(68,692)	(68,692)	(68,692)	(68,692)	3,227	3,227
Valley City School	80,451	-	-	80,451	-	1,195,265	-	-	1,195,265	(285,408)	(285,408)	(285,408)	(285,408)	13,408	13,408
Velva School	31,992	-	-	31,992	-	475,302	-	-	475,302	(113,494)	(113,494)	(113,494)	(113,494)	5,332	5,332
Wahpeton School	86,109	-	-	86,109	-	1,279,334	-	-	1,279,334	(305,482)	(305,482)	(305,482)	(305,482)	14,352	14,352
Ward County	360	-	-	360	-	5,342	-	-	5,342	(1,276)	(1,276)	(1,276)	(1,276)	60	60

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2014

	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	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	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 Inflows of Resources	2015	2016	2017	2018	2019	Thereafter
	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Warwick School	21,027	-	-	21,027	-	312,397	-	-	312,397	(74,595)	(74,595)	(74,595)	(74,595)	3,504	3,504
Washburn School	19,737	-	-	19,737	-	293,233	-	-	293,233	(70,019)	(70,019)	(70,019)	(70,019)	3,289	3,289
West Fargo School	600,568	-	-	600,568	-	8,922,684	-	-	8,922,684	(2,130,576)	(2,130,576)	(2,130,576)	(2,130,576)	100,095	100,095
West River Student Services	7,973	-	-	7,973	-	118,455	-	-	118,455	(28,285)	(28,285)	(28,285)	(28,285)	1,329	1,329
Westhope School	12,924	-	-	12,924	-	192,017	-	-	192,017	(45,850)	(45,850)	(45,850)	(45,850)	2,154	2,154
White Shield School	18,935	-	-	18,935	-	281,313	-	-	281,313	(67,173)	(67,173)	(67,173)	(67,173)	3,156	3,156
Williston School	191,773	-	-	191,773	-	2,849,189	-	-	2,849,189	(680,335)	(680,335)	(680,335)	(680,335)	31,962	31,962
Wilmac Special Education	34,062	-	-	34,062	-	506,065	-	-	506,065	(120,839)	(120,839)	(120,839)	(120,839)	5,677	5,677
Wilton School	15,660	-	-	15,660	-	232,665	-	-	232,665	(55,556)	(55,556)	(55,556)	(55,556)	2,610	2,610
Wing School	8,690	-	-	8,690	-	129,103	-	-	129,103	(30,827)	(30,827)	(30,827)	(30,827)	1,448	1,448
Wishek School	15,065	-	-	15,065	-	223,816	-	-	223,816	(53,443)	(53,443)	(53,443)	(53,443)	2,511	2,511
Wolford School	6,329	-	-	6,329	-	94,026	-	-	94,026	(22,452)	(22,452)	(22,452)	(22,452)	1,055	1,055
Wyndmere School	18,854	-	-	18,854	-	280,113	-	-	280,113	(66,886)	(66,886)	(66,886)	(66,886)	3,142	3,142
Yellowstone Elem. School	6,363	-	-	6,363	-	94,536	-	-	94,536	(22,574)	(22,574)	(22,574)	(22,574)	1,061	1,061
Zeeland School	6,169	-	-	6,169	-	91,657	-	-	91,657	(21,886)	(21,886)	(21,886)	(21,886)	1,028	1,028
Grand Totals:	**8,012,012**	**-**	**-**	**8,012,012**	**-**	**119,035,086**	**-**	**-**	**119,035,086**	**(28,423,437)**	**(28,423,437)**	**(28,423,437)**	**(28,423,437)**	**1,335,339**	**1,335,339**

Note: Columns may not foot due to rounding.

Disclaimer: The GASB 68 Employer Template Note Disclosures provided by the North Dakota Teachers' Fund for Retirement (TFFR) is intended to provide participating employers with general guidance in accounting and financial reporting matters. The materials do not constitute, and should not be treated as, professional advice regarding the use of any particular or financial reporting technique. Every effort has been made to assure the accuracy of these materials. However, TFFR participating employers and auditors should independently verify all statements made before applying them to a particular fact situation, and should independently determine the consequences of any particular technique before implementing.

NOTE: Items in yellow will be input by employer or employer auditor each year.

West Fargo School District
Notes to the Financial Statements
for the Year Ended June 30, 2015

Summary of Significant Accounting Policies

Pensions. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Teachers' Fund for Retirement (TFFR) and additions to/deductions from TFFR's fiduciary net position have been determined on the same basis as they are reported by TFFR. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

General Information about the Pension Plan

North Dakota Teachers' Fund for Retirement

The following brief description of TFFR is provided for general information purposes only. Participants should refer to NDCC Chapter 15-39.1 for more complete information.

TFFR is a cost-sharing multiple-employer defined benefit pension plan covering all North Dakota public teachers and certain other teachers who meet various membership requirements. TFFR provides for pension, death and disability benefits. The cost to administer the TFFR plan is financed by investment income and contributions.

Responsibility for administration of the TFFR benefits program is assigned to a seven-member Board of Trustees (Board). The Board consists of the State Treasurer, the Superintendent of Public Instruction, and five members appointed by the Governor. The appointed members serve five-year terms which end on June 30 of alternate years. The appointed Board members must include two active teachers, one active school administrator, and two retired members. The TFFR Board submits any necessary or desirable changes in statutes relating to the administration of the fund, including benefit terms, to the Legislative Assembly for consideration. The Legislative Assembly has final authority for changes to benefit terms and contribution rates.

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Pension Benefits

For purposes of determining pension benefits, members are classified within one of three categories. Tier 1 grandfathered and Tier 1 non-grandfathered members are those with service credit on file as of July 1, 2008. Tier 2 members are those newly employed and returning refunded members on or after July 1, 2008.

Tier 1 Grandfathered

A Tier 1 grandfathered member is entitled to receive unreduced benefits when three or more years of credited service as a teacher in North Dakota have accumulated, the member is no longer employed as a teacher and the member has reached age 65, or the sum of age and years of service credit equals or exceeds 85. TFFR permits early retirement from ages 55 to 64, with benefits actuarially reduced by 6% per year for every year the member's retirement age is less than 65 years or the date as of which age plus service equal 85. In either case, benefits may not exceed the maximum benefits specified in Section 415 of the Internal Revenue Code.

Pension benefits paid by TFFR are determined by NDCC Section 15-39.1-10. Monthly benefits under TFFR are equal to the three highest annual salaries earned divided by 36 months and multiplied by 2.00% times the number of service credits earned. Retirees may elect payment of benefits in the form of a single life annuity, 100% or 50% joint and survivor annuity, ten or twenty-year term certain annuity, partial lump-sum option or level income with Social Security benefits. Members may also qualify for benefits calculated under other formulas.

Tier 1 Non-grandfathered

A Tier 1 non-grandfathered member is entitled to receive unreduced benefits when three or more years of credited service as a teacher in North Dakota have accumulated, the member is no longer employed as a teacher and the member has reached age 65, or has reached age 60 and the sum of age and years of service credit equals or exceeds 90. TFFR permits early retirement from ages 55 to 64, with benefits actuarially reduced by 8% per year from the earlier of age 60/Rule of 90 or age 65. In either case, benefits may not exceed the maximum benefits specified in Section 415 of the Internal Revenue Code.

Pension benefits paid by TFFR are determined by NDCC Section 15-39.1-10. Monthly benefits under TFFR are equal to the three highest annual salaries earned divided by 36 months and multiplied by 2.00% times the number of service credits earned. Retirees may elect payment of benefits in the form of a single life annuity, 100% or 50% joint and survivor annuity, ten or twenty-year term certain annuity, partial lump-sum option or level income with Social Security benefits. Members may also qualify for benefits calculated under other formulas.

Tier 2

A Tier 2 member is entitled to receive unreduced benefits when five or more years of credited service as a teacher in North Dakota have accumulated, the member is no longer employed as a teacher and the member has reached age 65, or has reached age 60 and the sum of age and years of service credit equals or exceeds 90. TFFR permits early retirement from ages 55 to 64, with benefits actuarially reduced by 8% per year from the earlier of age 60/Rule of 90 or age 65. In either case, benefits may not exceed the maximum benefits specified in Section 415 of the Internal Revenue Code.

SAMPLE

Pension benefits paid by TFFR are determined by NDCC Section 15-39.1-10. Monthly benefits under TFFR are equal to the five highest annual salaries earned divided by 60 months and multiplied by 2.00% times the number of service credits earned. Retirees may elect payment of benefits in the form of a single life annuity, 100% or 50% joint and survivor annuity, ten or twenty-year term certain annuity, partial lump-sum option or level income with Social Security benefits. Members may also qualify for benefits calculated under other formulas.

Death and Disability Benefits

Death benefits may be paid to a member's designated beneficiary. If a member's death occurs before retirement, the benefit options available are determined by the member's vesting status prior to death. If a member's death occurs after retirement, the death benefit received by the beneficiary (if any) is based on the retirement plan the member selected at retirement.

An active member is eligible to receive disability benefits when: (a) a total disability lasting 12 months or more does not allow the continuation of teaching, (b) the member has accumulated five years of credited service in North Dakota, and (c) the Board of Trustees of TFFR has determined eligibility based upon medical evidence. The amount of the disability benefit is computed by the retirement formula in NDCC Section 15-39.1-10 without consideration of age and uses the member's actual years of credited service. There is no actuarial reduction for reason of disability retirement.

Member and Employer Contributions

Member and employer contributions paid to TFFR are set by NDCC Section 15-39.1-09. Every eligible teacher in the State of North Dakota is required to be a member of TFFR and is assessed at a rate of 11.75% of salary as defined by NDCC Section 15-39.1-04. Every governmental body employing a teacher must also pay into TFFR a sum equal to 12.75% of the teacher's salary. Member and employer contributions will be reduced to 7.75% each when the fund reaches 100% funded ratio on an actuarial basis.

A vested member who terminates covered employment may elect a refund of contributions paid plus 6% interest or defer payment until eligible for pension benefits. A non-vested member who terminates covered employment must claim a refund of contributions paid before age 70½. Refunded members forfeit all service credits under TFFR. These service credits may be repurchased upon return to covered employment under certain circumstances, as defined by the NDCC.

SAMPLE

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2015 (employer's fiscal year-end), the Employer reported a liability of $78,543,146 (from Exhibit E, Column 2 in TFFR GASB Report) for its proportionate share of the net pension liability. The net pension liability was measured as of July 1, 2014, (date of TFFR GASB Report) and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The Employer's proportion of the net pension liability was based on the Employer's share of covered payroll in the pension plan relative to the covered payroll of all participating TFFR employers. At July 1, 2014, (date of TFFR GASB Report) the Employer's proportion was 7.495843 percent, (from Exhibit E, Column 1 in TFFR GASB Report) which was an increase or decrease of X.XXXXXX (employer will select increase or decrease and calculate change – not applicable for first year of implementation) from its proportion measured as of July 1, 2013 (one year prior to date above).

[If there had been a change of benefit terms that affected the measurement of the total pension liability since the prior measurement date, the Employer should disclose information required by paragraph 80e of Statement 68.] ***(TFFR will provide if applicable.)***

[If changes expected to have a significant effect on the measurement of the Employer's proportionate share of the net pension liability had occurred between the measurement date and the reporting date, the Employer should disclose information required by paragraph 80f of Statement 68.]

For the year ended June 30, 2015, (employer's fiscal year-end) the Employer recognized pension expense of $4,774,371 (from Exhibit E, Column 13 of TFFR GASB Report). At June 30, 2015, (employer's fiscal year-end) the Employer reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources (from Exhibit E, Columns 14 - 22 of TFFR GASB Report with the exception of employer contributions subsequent to the measurement date):

	Deferred Outflows of Resources	**Deferred Inflows of Resources**
Differences between expected and actual experience	$ 600,568	$ X,XXX
Changes of assumptions	X,XXX	X,XXX
Net difference between projected and actual earnings on pension plan investments	X,XXX	8,922,684
Changes in proportion and differences between employer contributions and proportionate share of contributions	X,XXX	X,XXX
Employer contributions subsequent to the measurement date (see below)	*,***	-
Total	*$ X,XXX	$8,922,684

*$600,568 plus Employer contributions subsequent to measurement date

SAMPLE

$*,*** reported as deferred outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2016 (employer's subsequent fiscal year-end). (Because valuation/measurement date will generally be one year prior to employers' fiscal year end, this amount will be the actual employer contributions (do not include employer paid member contributions) paid during the fiscal year for which this disclosure applies - in this example FY 2015 employer contributions – employers' responsibility to calculate).

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (from Exhibit E, Columns 23 - 28 of TFFR GASB Report – years will need to be rolled forward one year from dates in report):

Year ended June 30:	
2016	$ (2,130,576)
2017	(2,130,576)
2018	(2,130,576)
2019	(2,130,576)
2020	100,095
Thereafter	100,095

***Actuarial assumptions*.** The total pension liability in the July 1, 2014 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	4.50% to 14.75%, varying by service, including inflation and productivity
Investment rate of return	8.00%, net of investment expenses
Cost-of-living adjustments	None

For inactive members and healthy retirees, mortality rates are based on 80% of GRS Table 378 and 75% of GRS Table 379. For active members, mortality rates are based on the post-retirement mortality rates multiplied by 60% for males and 40% for females. For disabled retirees, mortality rates are based on the RP-2000 Disabled-Life tables for Males and Females multiplied by 80% and 95%, respectively.

The actuarial assumptions used were based on the results of an actuarial experience study dated January 21, 2010. They are the same as the assumptions used in the July 1, 2014, funding actuarial valuation for TFFR. *[If assumption changes result from a future experience study, the employer should summarize the changes.]* ***(TFFR will provide if applicable.)***

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset

SAMPLE

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	57%	7.53%
Global Fixed Income	22%	1.40%
Global Real Assets	20%	5.38%
Cash Equivalents	1%	0.00%

Discount rate. The discount rate used to measure the total pension liability was 8 percent as of June 30, 2014. 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, 2014, 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, 2014. 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, 2014. [If there had been a change in the discount rate since the prior measurement date, the Employer should disclose information about that change, as required by paragraph 78a of Statement 68.] ***(TFFR will provide if applicable.)***

Sensitivity of the District's proportionate share of the net pension liability to changes in the discount rate. The following presents the Employer's proportionate share of the net pension liability calculated using the discount rate of 8 percent, as well as what the Employer's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7 percent) or 1-percentage-point higher (9 percent) than the current rate: (from Exhibit E, Columns 4-6 TFFR GASB Report)

	1% Decrease (7%)	**Current Discount Rate (8%)**	**1% Increase (9%)**
Employer's proportionate share of the net pension liability	$106,047,820	$78,543,146	$55,410,914

Pension plan fiduciary net position. Detailed information about the pension plan's fiduciary net position is available in the separately issued TFFR financial report. [If significant changes had occurred that indicate that the disclosures included in the pension plan's financial report generally did not reflect the facts and circumstances at the measurement date, the Employer should disclose additional information, as required by paragraph 79 of Statement 68.] ***(TFFR will provide if applicable.)***

Payables to the pension plan

[If the Employer reported payables to the defined benefit pension plan, it should disclose information required by paragraph 122 of Statement 68 – employers' responsibility to calculate.]

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Schedules of Required Supplementary Information

Schedule of Employer's Share of Net Pension Liability
ND Teachers' Fund for Retirement
Last 10 Fiscal Years*
(from Exhibit E and Exhibit 2 of TFFR GASB Report)

	2015	
1. District's proportion of the net pension liability (asset)	7.495843%	Exhibit E, Column 1
2. District's proportionate share of the net pension liability (asset)	$78,543,146	Exhibit E, Column 2
3. District's covered-employee payroll	$43,479,882	Exhibit E, Column 3
4. District's proportionate share of the net pension liability (asset) as a percentage of its covered-employee payroll	180.64%	Calculate, 2 divided by 3
5. Plan fiduciary net position as a percentage of the total pension liability	66.6%	Exhibit 2

*Complete data for this schedule is not available prior to 2015.

If employer is using prior year measurement date may want to note that the amounts presented for each fiscal year have a measurement date of the previous fiscal year end.

Schedule of Employer Contributions
ND Teachers' Fund for Retirement
Last 10 Fiscal Years*
(from Exhibit E of TFFR GASB Report)

	2015	
Statutorily required contribution	$4,674,044	Exhibit E, Column 7
Contributions in relation to the statutorily required contribution	($4,674,044)	Exhibit E, Column 8
Contribution deficiency (excess)	$0.00	Exhibit E, Column 9
District's covered-employee payroll	$43,479,882	Exhibit E, Column 3
Contributions as a percentage of covered-employee payroll	10.75%	Exhibit E, Column 10

*Complete data for this schedule is not available prior to 2015.

SAMPLE

Notes to Required Supplementary Information
for the Year Ended June 30, 2015

Changes of benefit terms.
(TFFR will provide if applicable.)

Changes of assumptions.
(TFFR will provide if applicable.)

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MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **Actuarial Contract**

As fiduciaries, the Board has a duty to select plan services providers prudently, and once selected, to monitor the quality of their work regularly. Trustees also have an obligation to review the fees paid to those service providers periodically to ensure that the fees are reasonable.

Over the last 10 years, actuarial fees paid averaged about $131,000 per year (Attachment 1). For the fiscal year ending June 30, 2014, actuarial fees paid ($71,000) were about .003% (3/1000 of 1%) of market value ($2.09 billion). Actuarial costs are largely impacted by legislative proposals, special studies, compliance issues, and board initiatives.

In 2011, the TFFR Board requested bids for the actuarial consulting contract. Segal was awarded the contract for the July 1, 2011 – June 30, 2013 time period, with an option to renew the contract. The Board approved a two-year contract with Segal for July 1, 2013 – June 30, 2015.

There are a number of actuarial studies and reviews that will be conducted in the next few years (Attachment 2). As part of their current 2013-2015 contract, Segal is conducting an actuarial Experience Study for the Fund which will be delivered this spring. We have also worked closely with Segal on all required GASB schedules, reports, and information, and hope to refine the process in the next year.

Per board policy, an actuarial audit should be conducted every 5 years by an outside actuarial firm to provide assurance to the Board that actuarial calculations being done by the current actuary (Segal) are correct, and work is being done in compliance with actuarial standards. This study is scheduled for 2016.

I have visited with Segal about conducting a compliance review of plan statutes and assisting TFFR to submit an application for IRS plan qualification which is required during the February 1, 2015 – January 31, 2016 time frame (Cycle C).

At this time, the Board has two options to consider:

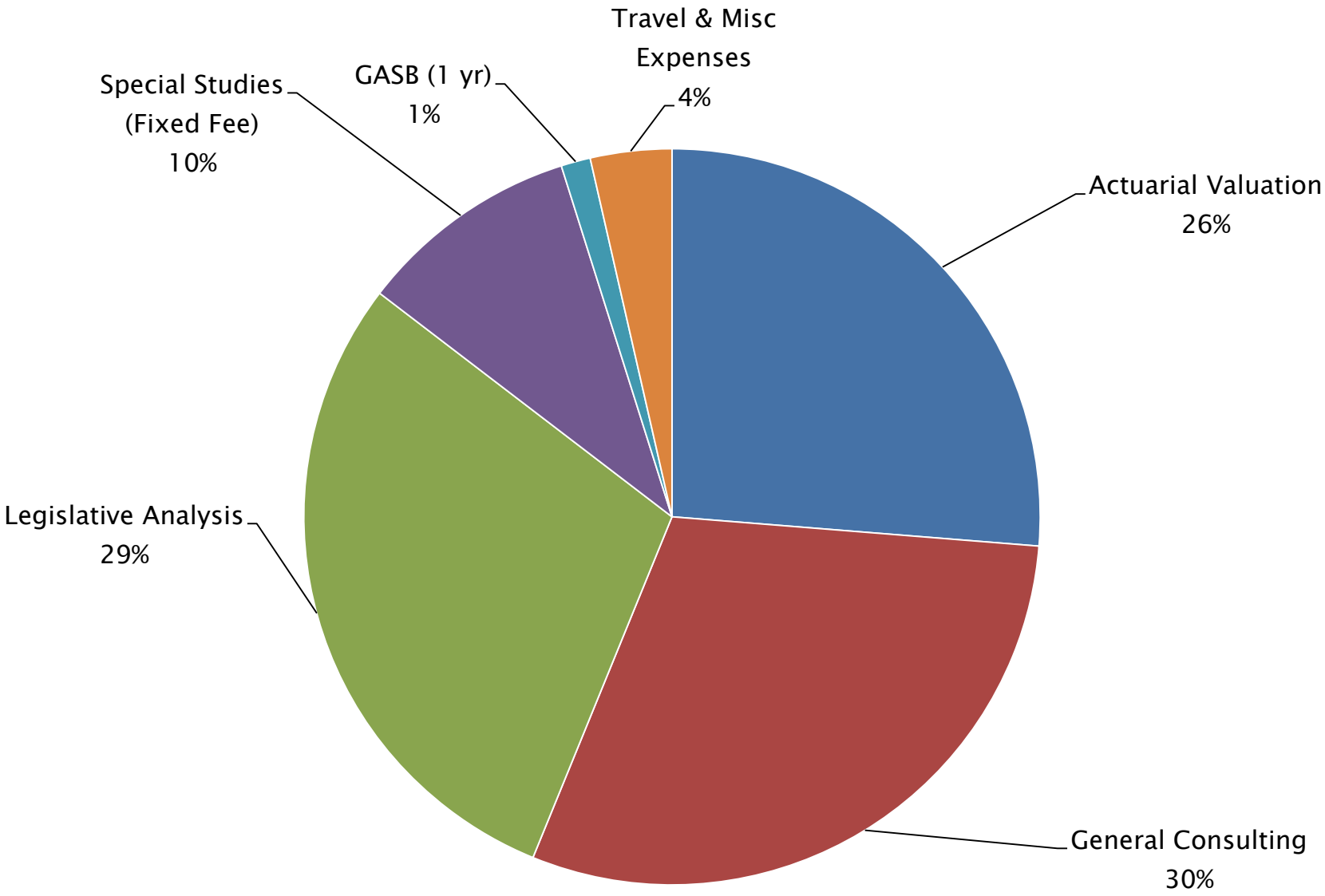
1) Conduct full search for actuarial consultant through the RFP process.

2) Request cost proposal from Segal for another 2 year term. Decide at future meeting whether to accept Segal cost proposal and extend contract.

ND TEACHERS' FUND FOR RETIREMENT
SUMMARY OF ACTUARY FEES PAID
July 1, 2005 - June 30, 2014

Fiscal Year	Total Bill	Actuarial Valuation	General Consulting	Legislative Analysis	Special Studies (Fixed Fee)	GASB	Travel & Misc. Expenses
2005	$ 160,453	$ 31,143	$ 39,190	$ 13,212	$ 70,000		$ 6,908
2006	$ 104,532	$ 24,676	$ 56,241	$ 14,137	$ 7,296		$ 2,181
2007	$ 118,261	$ 31,000	$ 38,400	$ 33,389	$ 13,165		$ 2,307
2008	$ 132,108	$ 32,000	$ 75,836	$ 21,724			$ 2,548
2009	$ 81,542	$ 34,500	$ 28,538	$ 14,767			$ 3,737
2010	$ 196,991	$ 36,000	$ 35,141	$ 84,736	$ 37,000		$ 4,114
2011	$ 254,290	$ 37,400	$ 26,986	$ 183,988			$ 5,918
2012	$ 93,777	$ 40,584	$ 43,112	$ 1,855			$ 8,226
2013	$ 94,848	$ 35,946	$ 39,551	$ 14,381			$ 4,970
2014	$ 71,263	$ 40,380	$ 8,050	$ 140		$ 16,894	$ 5,800
Totals	$ 1,308,065	$ 343,629	$ 391,045	$ 382,329	$ 127,461	$ 16,894	$ 46,709

ND TFFR Consulting Fees Paid
7-1-2005 - 6-30-2014



TFFR Plan Studies

Experience Study

Valuation	Report	Consultant
7-2014	*2015	Segal
7-2009	1-2010	GRS
7-2004	3-2005	GRS
7-1999	3-2000	WW
7-1994	2-1995	WW

Asset Liability Study

Valuation	Report	Consultant
7-2014	*2015	??
7-2009	2010-11	Callan
7-2004	6-2005	GRS
7-1999	6-2000	WW
7-1994	8-1995	WW

Actuarial Audit

Valuation	Report	Consulting Actuary	Auditing Actuary
7-2015	*2016	Segal	??
7-2010	7-2011 Transition	GRS	Segal
7-2005	9-2006	GRS	Buck
7-1999	7-2000	WW	Buck
7-1989	7-1990 Transition	Segal	WW

IRS Determination Letter (Compliance Review)

Statutes	Date Filed	Received	Consultant
2015	*2015 (2/15 – 1/16)		Segal
2009	7-2010	5-2012	Calhoun
1999	6-2000	1-2001	WW

TFFR Ends
Annual Review
Year Ended June 30, 2014

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**

  We have used the CPAS pension administration software and FileNet document management software for nine years and both continue to meet our needs. During the past year the CPAS procedure manuals were updated to include all the configuration and process changes resulting from the legislated benefit and contribution changes that were implemented since 2011. Retirement and IT staff also drafted specifications for a Member Online Services application.

- **Collections and Payments**

  Collected member and employer contributions totaling $118.9 million from 219 employers and $2.0 million from members for the purchase of service credit.

  Paid out $158.4 million in pension benefits and $3.9 million in refunds and rollovers totaling $162.3 million for the year.

  About 71% of employers electronically report contributions to TFFR. This comprises over 92% of the active membership.

  As of June 30, 2014, 151 employers are reporting using TFFR Employer Online Services.

  Assessed 18 reporting penalties and withheld foundation payments from no school districts. TFFR waived 7 of the 18 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.)

- **Employer Outreach Programs**

  Met with school board members, business managers, and software vendors at the 2013 School Board and School Business Manager Association Annual Conference. A presentation to school board attendees was also provided.

  Made four presentations to school district business managers at regional workshops on TFFR reporting requirements.

Ends Policy: **Member Services**

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

- **Outreach Program Statistics**

  1,577 people attended outreach programs (plus convention participants)
  Retirement Services staff traveled 5,850 miles

- **Preretirement Seminars**

  105 members attended
  2 locations – Grand Forks & Bismarck

  Pre-retirement Seminars are generally held at two sites each year in July and rotate between Bismarck, Minot, Fargo, and Grand Forks. Additional seminars will be added if requested by an employer and minimum attendance can be met.

- **Benefits Counseling Sessions**

  Statewide - 260 members
  14 locations – Grand Forks, Williston, Valley City, Dickinson, Fargo, Minot, Devils Lake, Bismarck, Jamestown, Wahpeton, Rugby, West Fargo, Turtle Lake, and Garrison

  Local Office – 325 members

- **Group Presentations**

  837 people attended

  NDRTA Convention
  Retirement 101 (Bismarck)
  Spring Business Managers Workshop (Minot, Devils Lake, Valley City, Dickinson)
  NDCEL Conferences
  ND United Common Core Conference
  SBA Convention – School Board Members
  ESPB
  DPI Administrator Workshop

- **Conferences and Conventions**

  ND Retired Teachers Convention – Fargo
  ND School Board Convention - Bismarck
  ND Career and Technical Education Convention – Bismarck
  NDCEL Annual Conference – Bismarck
  ND United Common Core Conference – Bismarck

- **Member/Employer Communications**

  Report Card non-retired newsletter (2 publications)
  Retirement Today retiree newsletter (2 publications)
  Briefly employer newsletter (4 publications sent electronically)

Updated Employer Guide
GASB Stmt 68 Implementation Working Group Planning Session

- **Member Statements**

  Mailed 12,116 annual benefits statements to non-retired members in August
  Mailed 7,498 annual statements to retired members in December

- **Other**

  NDRIO web site was visited by 9,871 people a total of 21,361 times. The average length of each visit was three minutes.

Ends Policy: **Account Claims**

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

- **Annuity Payments**

  Distributed annuities to 7,652 retired members and beneficiaries as of June 30, 2014. For the year, pension benefits totaled $158.4 million. Of the total, about 99% of the payments were deposited via electronic funds transfer.

- **Monthly Payroll Deductions** (July 1, 2014 payroll – total 7,724)

Federal tax withholding	5,851	76%
ND state tax withholding	4,740	61%
PERS health insurance	748	10%
PERS dental insurance	399	5%
PERS vision insurance	166	2%
PERS life insurance	36	<1%

- **Refunds, Rollovers & Transfers**

  Distributed refund and rollover payments of $3.9 million to 233 participants during the fiscal year. Approximately 39% of the refunding members rolled over their refund payment to an IRA or another eligible plan.

- **Processed Claims for Benefits**

Refunds	143
Rollovers	90
Retirements	407
Disabilities	7
Survivor annuitants	4
Continuing annuitants	43

- **Member Account Activity**

New members	1,006
Deaths	210
Pop ups	51
Purchase requests	161

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, 2014 was presented to the TFFR Board by Segal on October 23, 2014.

- **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, 2014. Clifton Larson Allen, LLP presented the report to the SIB Audit Committee on November 20, 2014.

- **Internal Audit**

  The Internal Audit report was presented to the TFFR Board on October 23, 2014.

- **Other**

  Received Certificate of Achievement in Financial Reporting from GFOA for June 30, 2013, Annual Financial Report.

  Received 2014 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

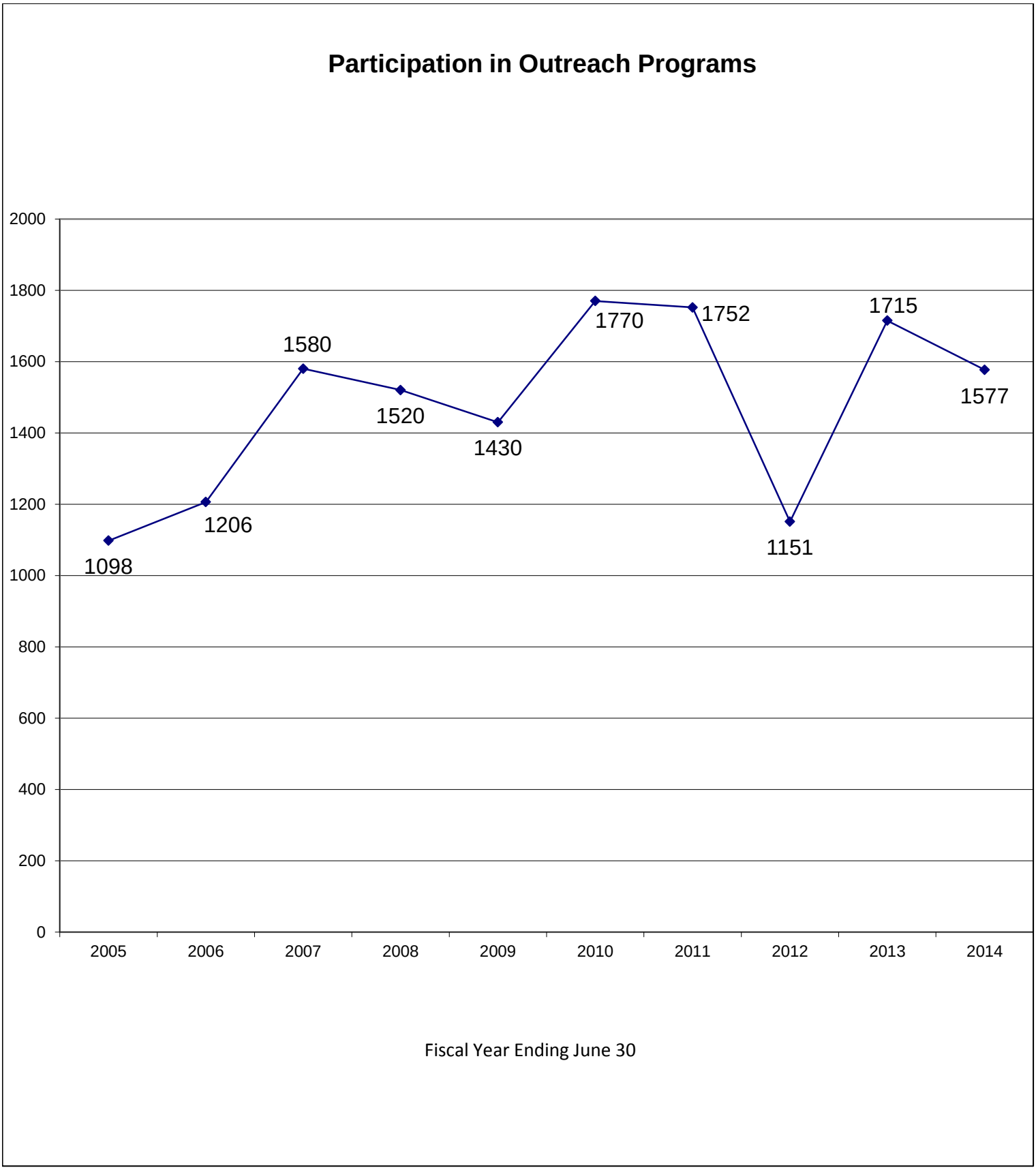
>Service Retiree History & Option Usage

>Retiree Statistics

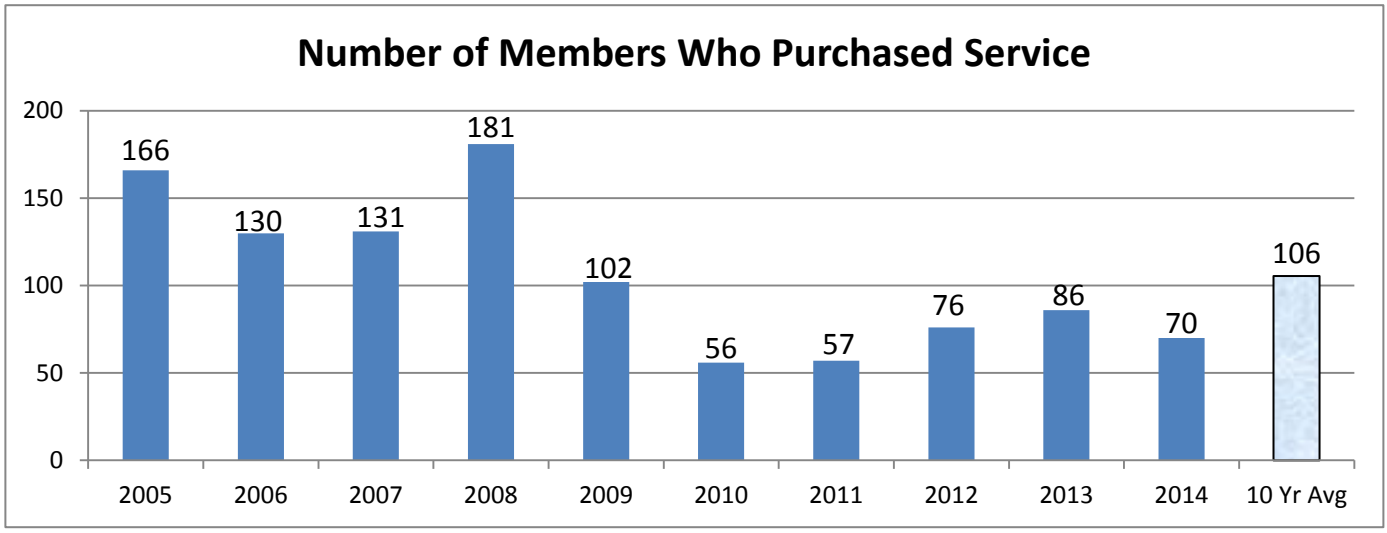
>Disability Retirements

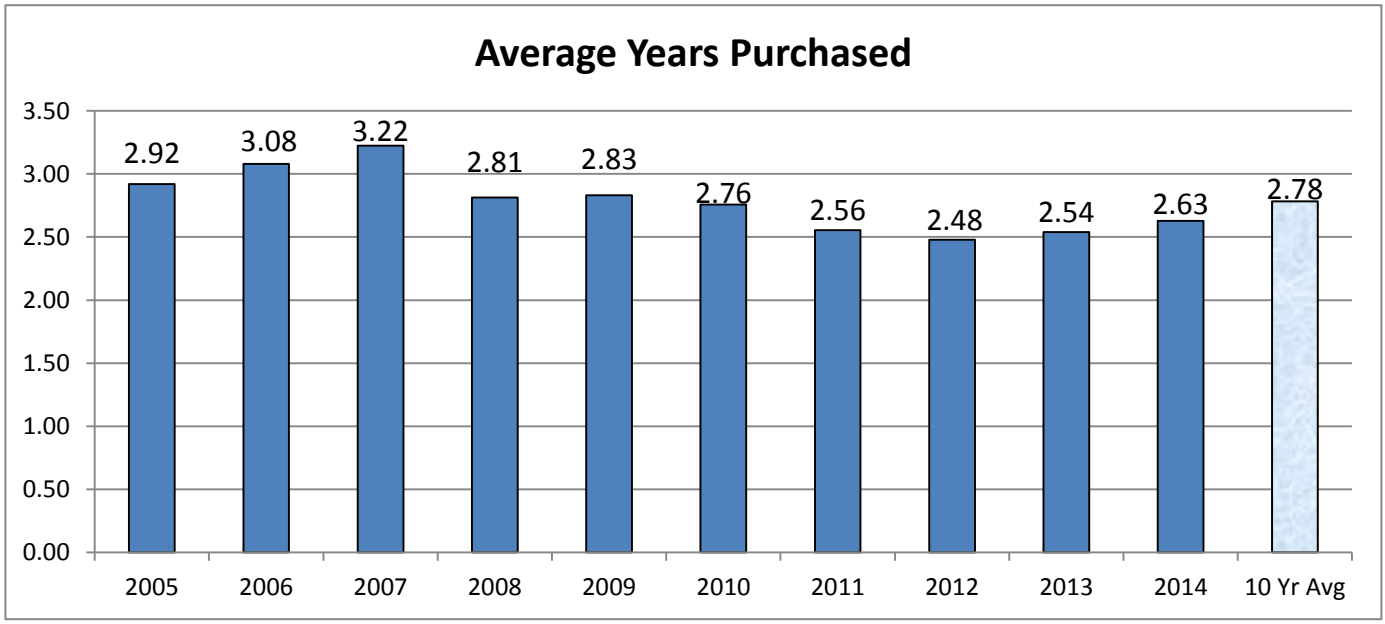
>Re-Employed Retirees

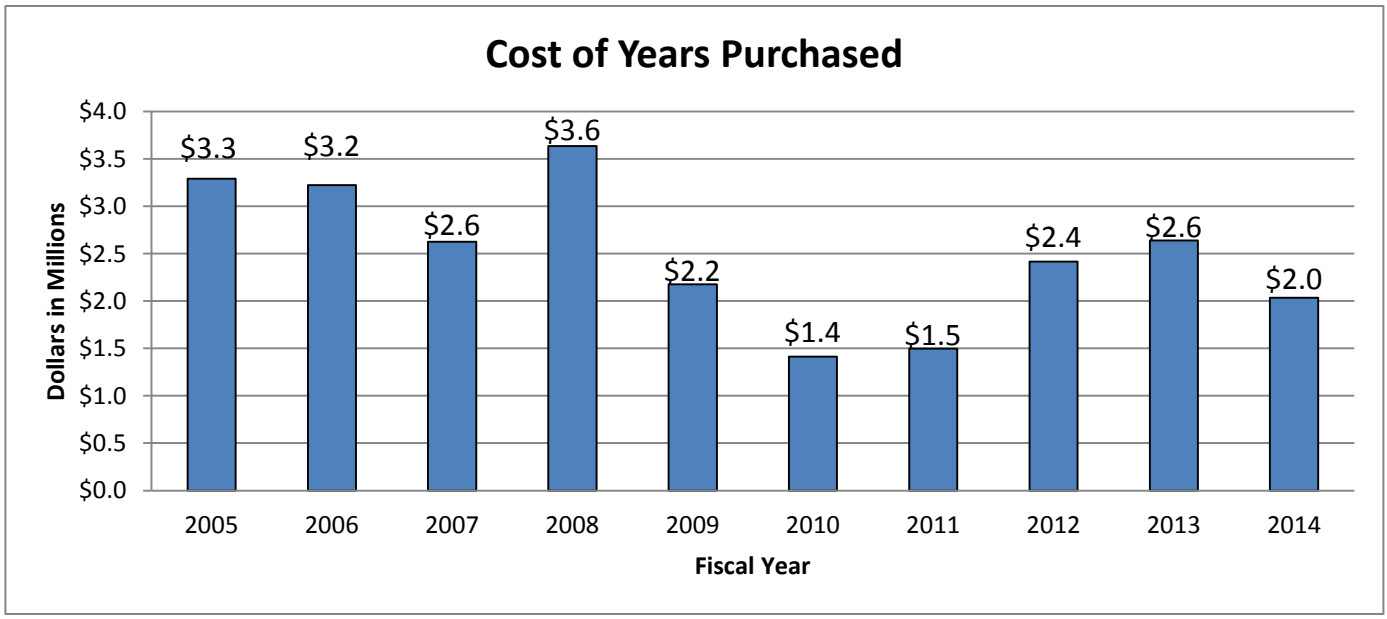
>Employer History & Current Employer Payment Model Statistics

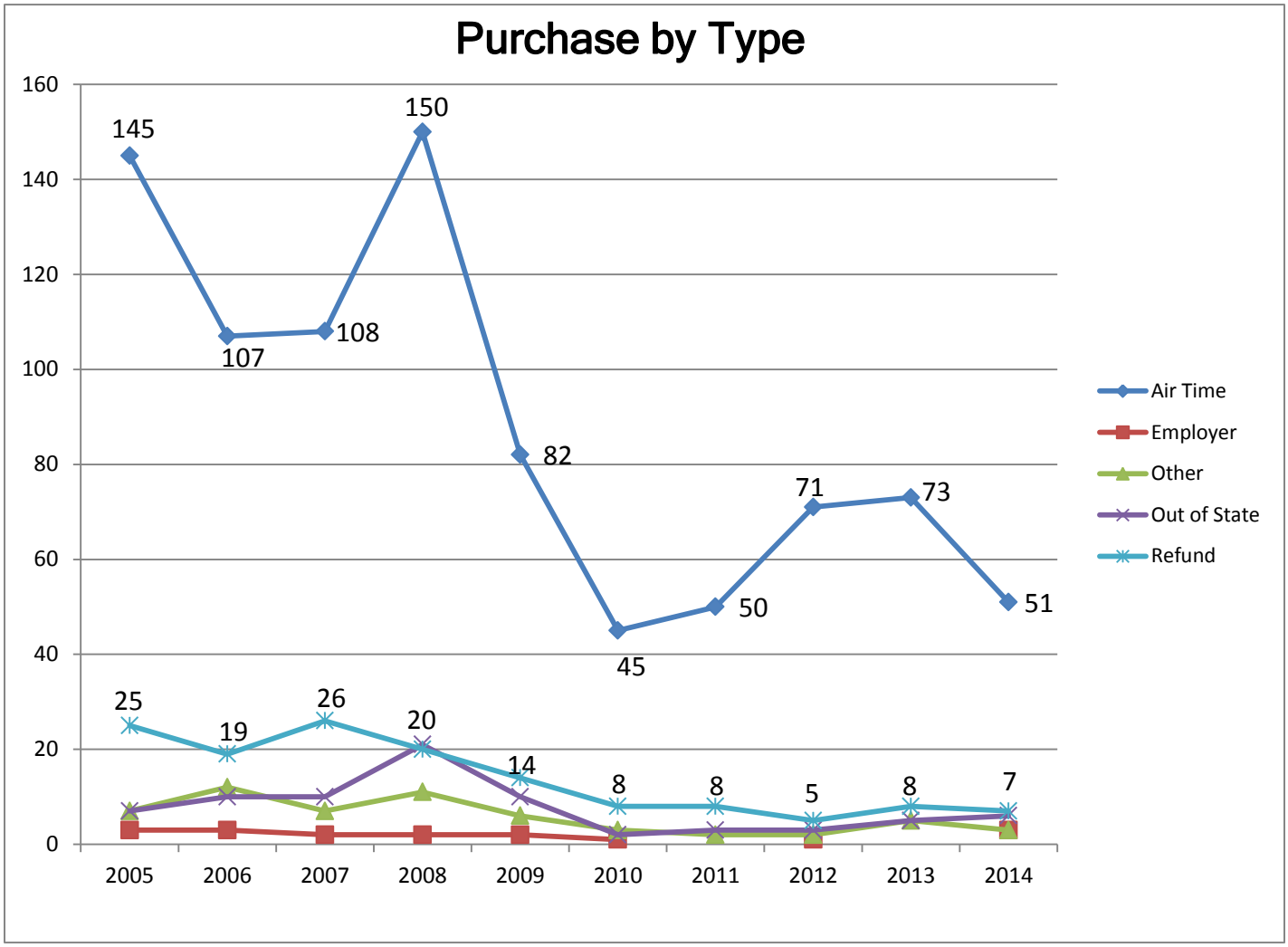

Participation in Outreach Programs
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1098
1206
1580
1520
1430
1770
1752
1151
1715
1577
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Fiscal Year Ending June 30

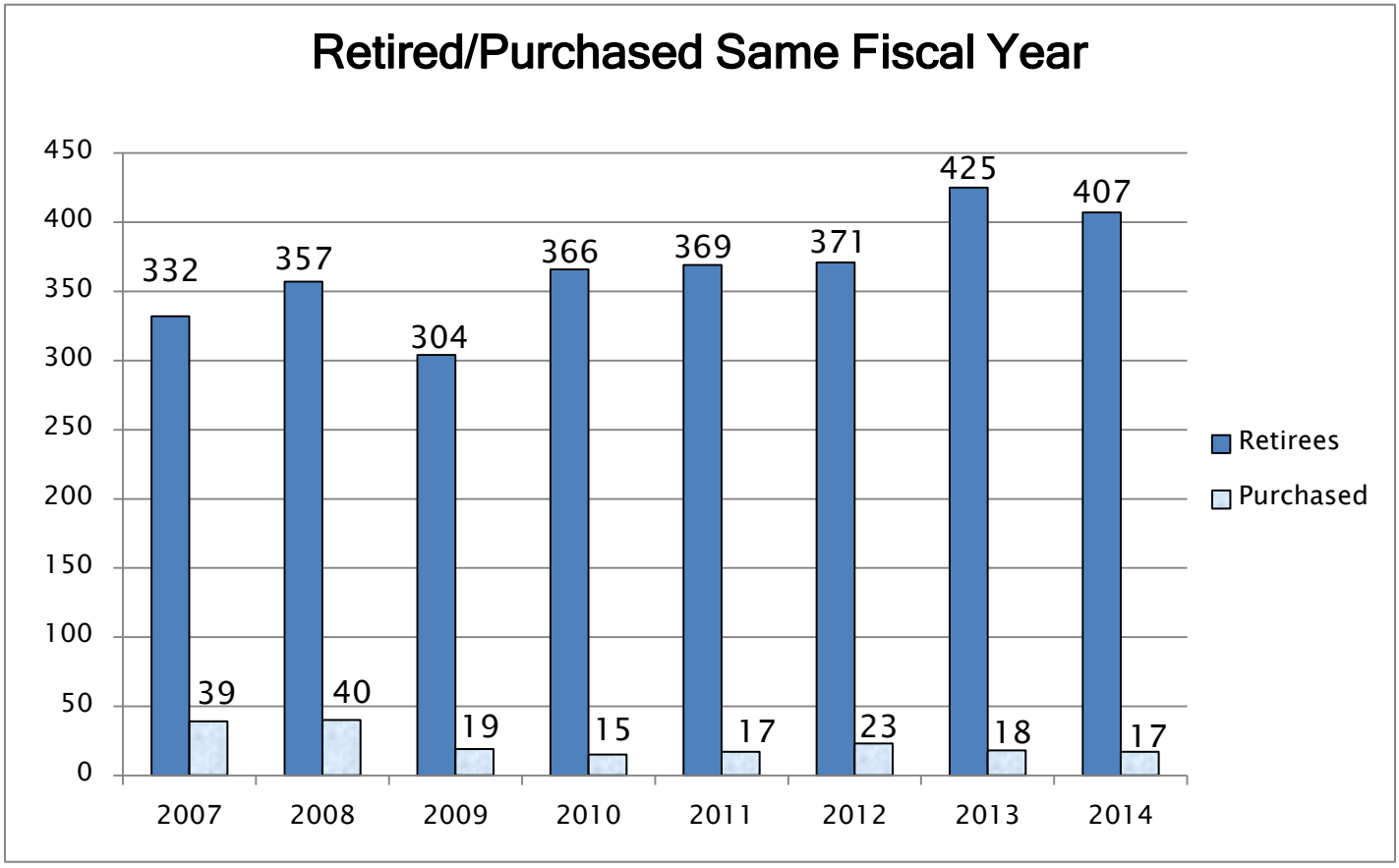
Service Purchase Statistics - 2014



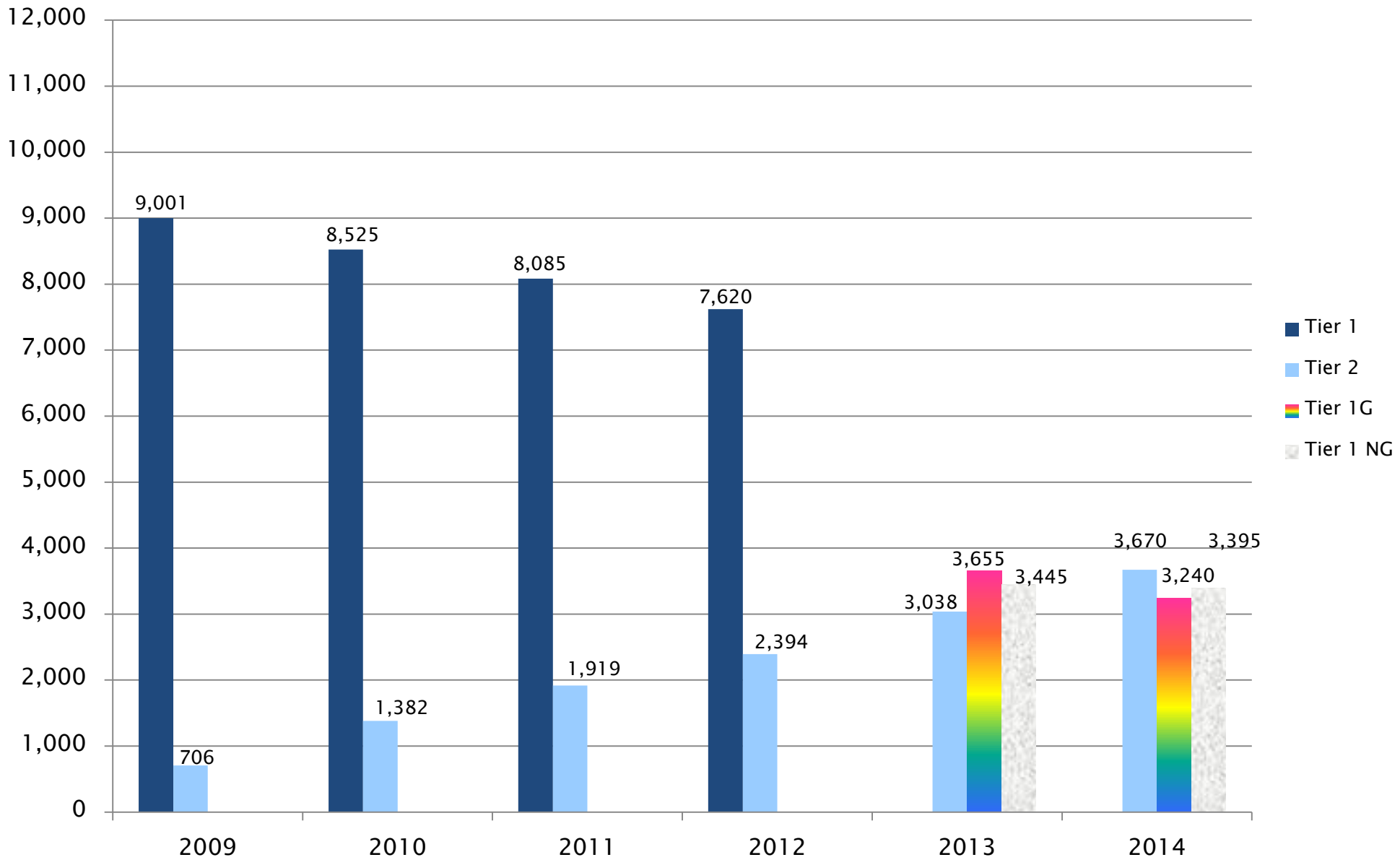


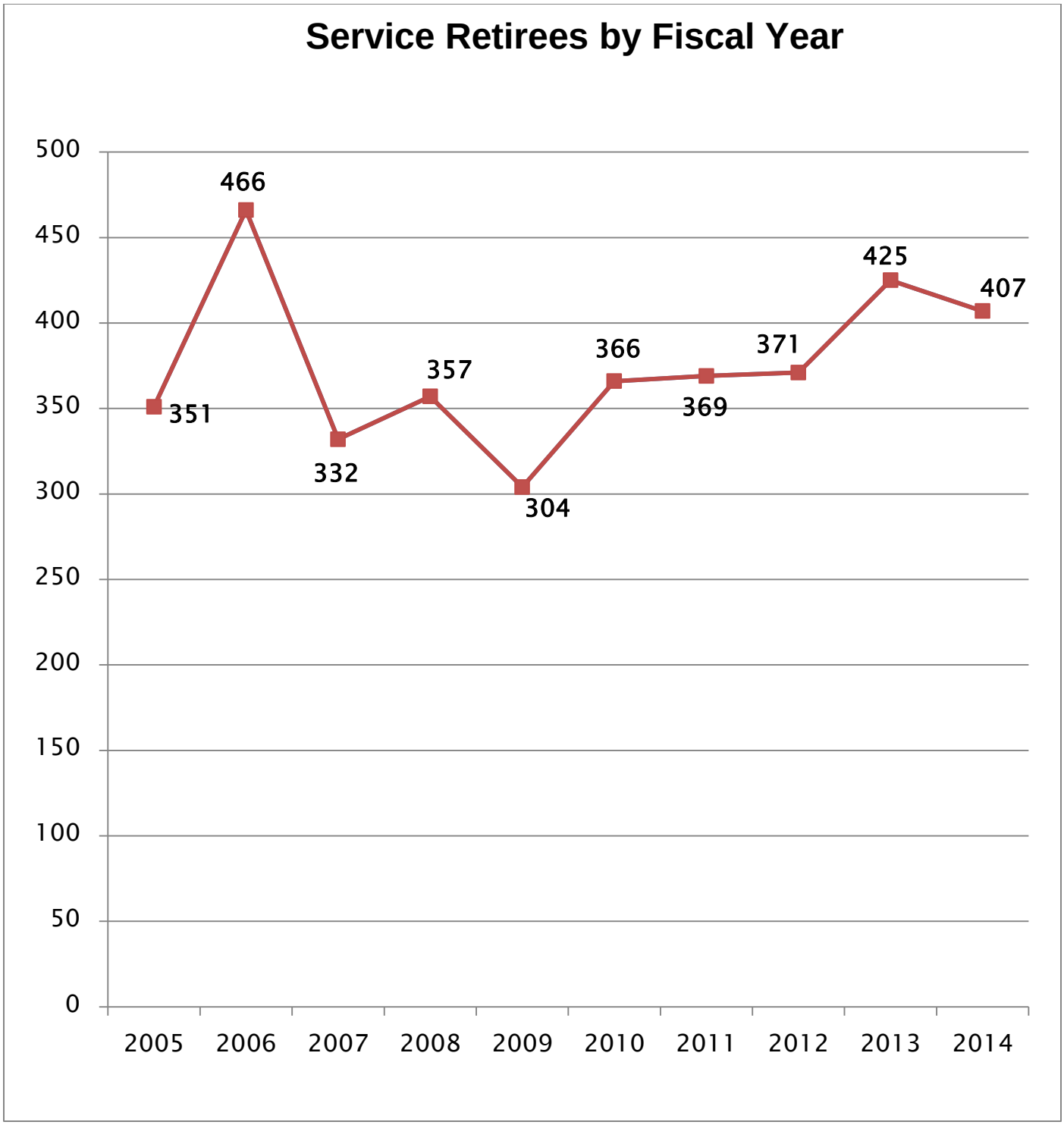



Purchase by Type
160
140
120
100
80
60
40
20
0
145
107
108
150
82
45
50
71
73
51
25
19
26
20
14
8
8
5
8
7
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Air Time
Employer
Other
Out of State
Refund


Retired/Purchased Same Fiscal Year
450
400
350
300
250
200
150
100
50
0
332
357
304
366
369
371
425
407
39
40
19
15
17
23
18
17
2007
2008
2009
2010
2011
2012
2013
2014
Retirees
Purchased

ACTIVE MEMBERSHIP
TIER STATISTICS

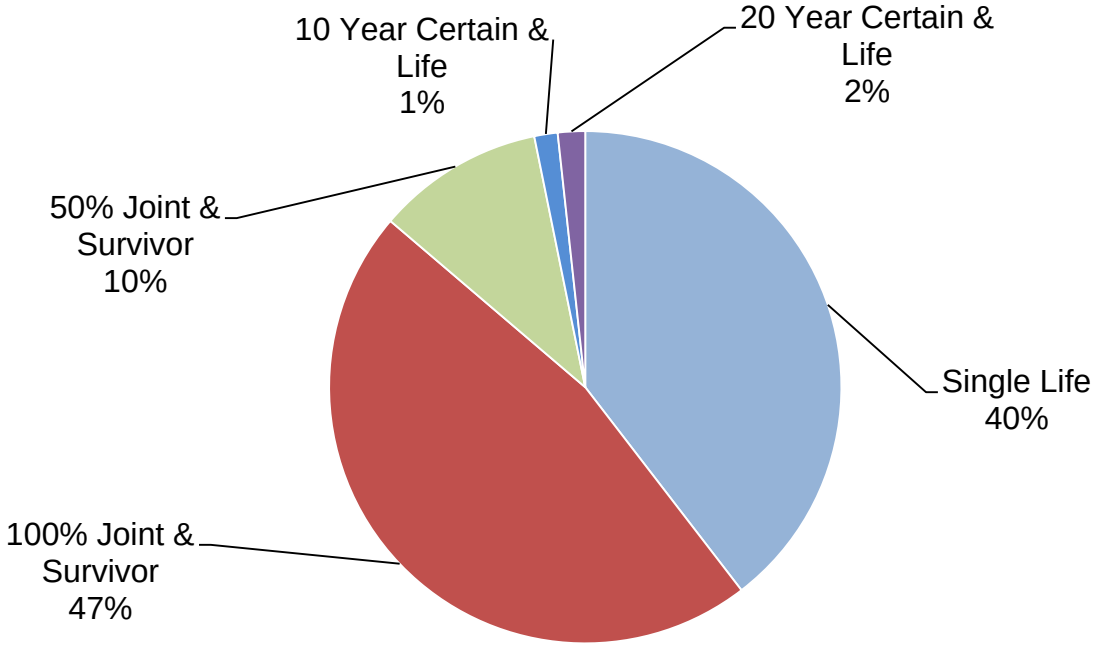



Service Retirees by Fiscal Year
500
450
400
350
300
250
200
150
100
50
0
466
351
332
357
304
366
369
371
425
407
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Service Retirement Options

2013-14

Retirement Option	Number
Single Life	161
100% Joint & Survivor	190
50% Joint & Survivor	43
10 Year Certain & Life	6
20 Year Certain & Life	7
Total	**407**



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

Of total, 19 members (5%) selected partial lump sum option.

TFFR RETIREE STATISTICS
OCTOBER 2014

Data Selection

- 7,747 retired members and beneficiaries as of July 2014 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	$ 500	$ 7,998	23.7	58.5	89.8	150
1980	$ 653	$ 14,362	29.8	60.2	91.6	31
1981	$ 654	$ 14,497	27.1	60.1	92.9	37
1982	$ 688	$ 19,161	26.2	61.1	92.0	36
1983	$ 548	$ 14,613	22.3	58.9	88.4	22
1984	$ 870	$ 21,190	30.5	62.3	91.3	78
1985	$ 927	$ 24,013	29.9	60.3	87.1	21
1986	$ 1,012	$ 25,243	31.9	62.0	89.2	103
1987	$ 852	$ 23,438	26.0	60.2	87.2	27
1988	$ 1,060	$ 26,208	29.6	60.9	86.3	129
1989	$ 893	$ 25,595	25.0	58.4	83.1	30
1990	$ 1,114	$ 27,399	29.5	59.7	83.3	250
1991	$ 988	$ 27,720	26.5	60.2	82.6	90
1992	$ 1,229	$ 30,668	30.2	59.3	81.0	175
1993	$ 1,138	$ 32,427	25.6	58.7	78.7	76
1994	$ 1,287	$ 32,018	28.5	59.7	80.1	269
1995	$ 1,258	$ 32,259	27.4	59.1	77.6	200
1996	$ 1,256	$ 32,701	27.0	58.6	76.6	163
1997	$ 835	$ 27,257	20.0	58.2	75.7	77
1998	$ 1,496	$ 34,277	28.9	59.0	75.3	332
1999	$ 1,080	$ 33,139	20.9	58.6	73.6	93
2000	$ 1,665	$ 37,594	28.8	58.9	73.4	415
2001	$ 1,385	$ 38,050	23.2	57.3	70.6	81
2002	$ 1,743	$ 39,248	28.3	58.3	70.8	485
2003	$ 1,732	$ 40,512	27.2	58.3	69.4	283
2004	$ 1,790	$ 41,455	27.6	58.3	68.5	352
2005	$ 1,916	$ 43,235	27.7	58.4	67.7	354
2006	$ 1,963	$ 44,712	27.6	58.9	67.0	368
2007	$ 2,094	$ 47,562	27.5	59.0	65.8	359
2008	$ 1,998	$ 45,979	26.3	59.5	65.7	363
2009	$ 2,162	$ 49,300	27.2	59.2	64.4	339
2010	$ 2,153	$ 50,110	26.2	60.5	64.6	335
2011	$ 2,218	$ 51,273	26.2	60.5	63.8	397
2012	$ 2,335	$ 53,910	26.7	60.7	62.8	370
2013	$ 2,633	$ 58,338	27.8	60.5	61.8	461
2014	$ 2,712	$ 60,728	28.7	61.0	61.3	366
2015	$ 3,180	$ 74,824	25.2	60.9	60.9	30
All FY	**$ 1,783**	**$ 41,478**	**27.5**	**59.5**	**71.0**	**7,747**

*Note: 2015 is a partial year (30 retirees) and includes July 1, 2014 retirees. Therefore, averages are higher, since count includes primarily administrators, with some summer school, deferred, disability, and survivors.

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	$ 500	$ 7,998	23.7	58.5	89.8	150
1979-1983 or 1.00%	$ 645	$ 15,817	26.7	60.2	91.5	126
1983-1985 or 1.05%	$ 882	$ 21,789	30.4	61.9	90.4	99
1985-1987 or 1.15%	$ 978	$ 24,868	30.7	61.6	88.8	130
1987-1989 or 1.22%	$ 1,029	$ 26,092	28.7	60.4	85.7	159
1989-1991 or 1.275%	$ 1,081	$ 27,484	28.7	59.9	83.1	340
1991-1993 or 1.39%	$ 1,201	$ 31,201	28.8	59.1	80.3	251
1993-1997 or 1.55%	$ 1,223	$ 31,726	26.9	59.1	78.1	709
1997-1999 or 1.75%	$ 1,405	$ 34,028	27.2	58.9	75.0	425
1999-2001 or 1.88%	$ 1,619	$ 37,668	27.9	58.7	72.9	496
2001-present or 2.00%	$ 2,128	$ 48,495	27.3	59.5	65.6	4,862
All Formulas	**$ 1,783**	**$ 41,478**	**27.5**	**59.5**	**71.0**	**7,747**

TFFR Retiree Statistics
By Retirement Type

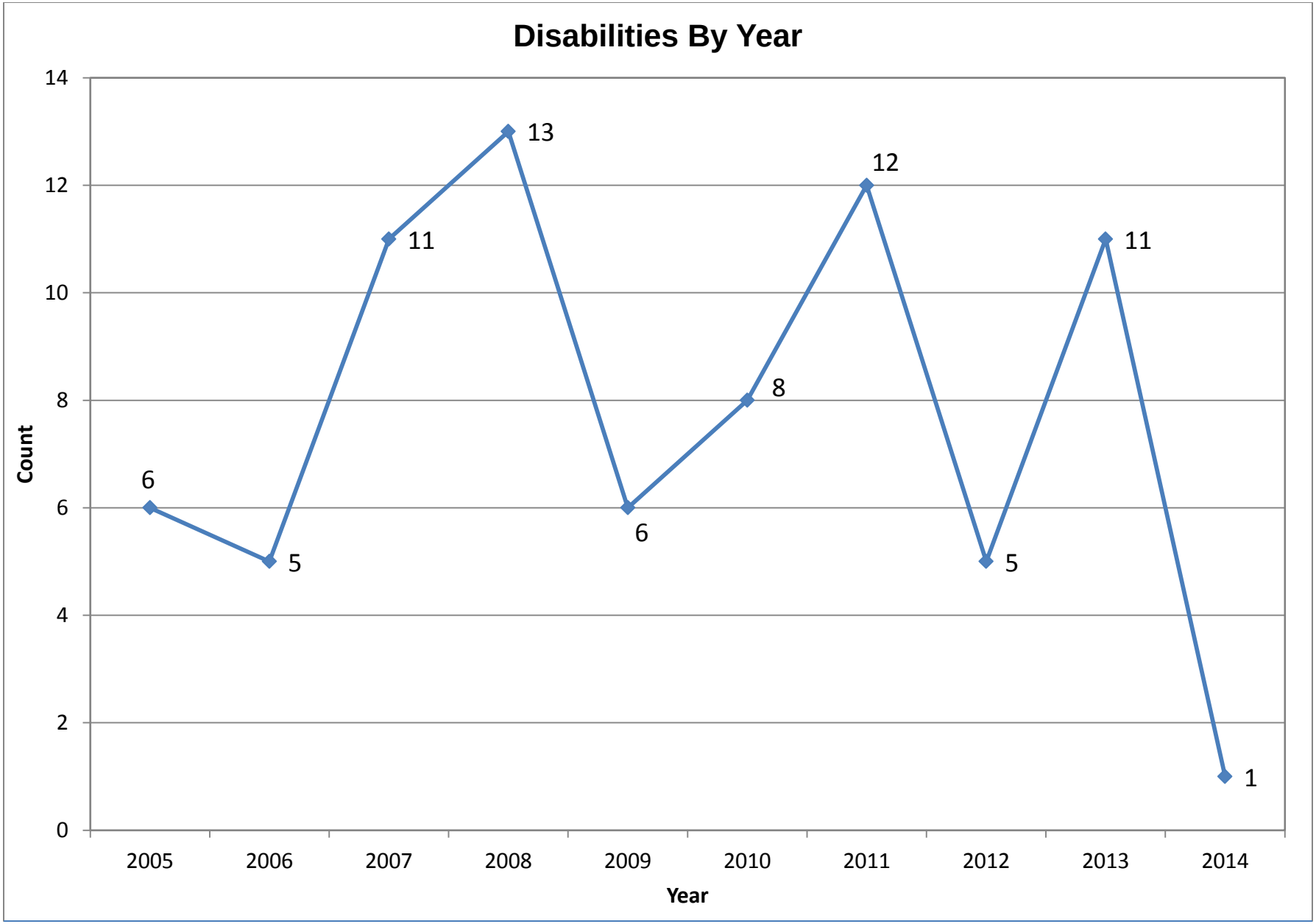
Type	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
Death	$ 1,142	$ 3,289	27.7	59.0	73.8	607
Disability	$ 1,207	$ 36,026	15.1	49.7	61.3	127
Early	$ 638	$ 31,475	14.8	60.1	71.6	906
Normal	$ 2,034	$ 43,893	29.7	59.6	70.8	6,084
QDRO	$ 748	$ 42,795	11.3	57.6	68.0	23
All Types	**$ 1,783**	**$ 41,478**	**27.5**	**59.5**	**71.0**	**7,747**

Disability Summary -- 1995 - 2014

• Total disabilities approved since 1995 - 2014	160*
Of 160, number of physical disabilities:	135
Of 160, number of emotional disabilities:	25
• Average number of disabilities approved per year:	8
• Of 160, number that are living and drawing benefits:	113
Of 160, number that are living and returned to work:	6
Of 160, number that are deceased:	41
• Of 160, option selected was:	
Count of Single Life:	108
Count of 100% Joint & Survivor:	32
Count of 50% Joint & Survivor:	14
Count of 5 Year Certain & Life:	1
Count of 10 Year Certain & Life:	4
Count of 20 Year Certain & Life:	1
• Of 113 living and drawing benefits:	
Average service credit in years:	15.5
Average age in years:	60
Average monthly benefit:	$1,281
Average years benefit was received:	9.9
Number of physical disabilities:	91
Number of emotional disabilities:	22
• Of 6 living and returned to work:	
Average service credit in years:	14.7
Average age in years:	59
Average monthly benefit:	$1,045
Average years benefit was received:	3.6
Number of physical disabilities:	4
Number of emotional disabilities:	2

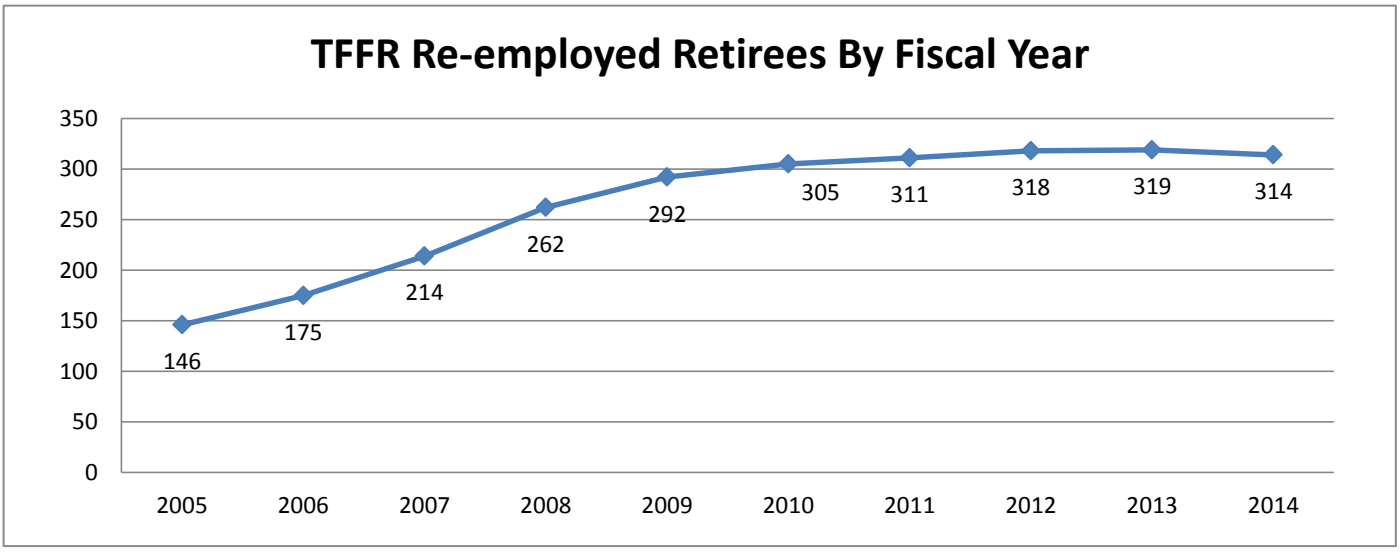
*Approved disabilities removed from total if they returned to employment then refunded or retired.

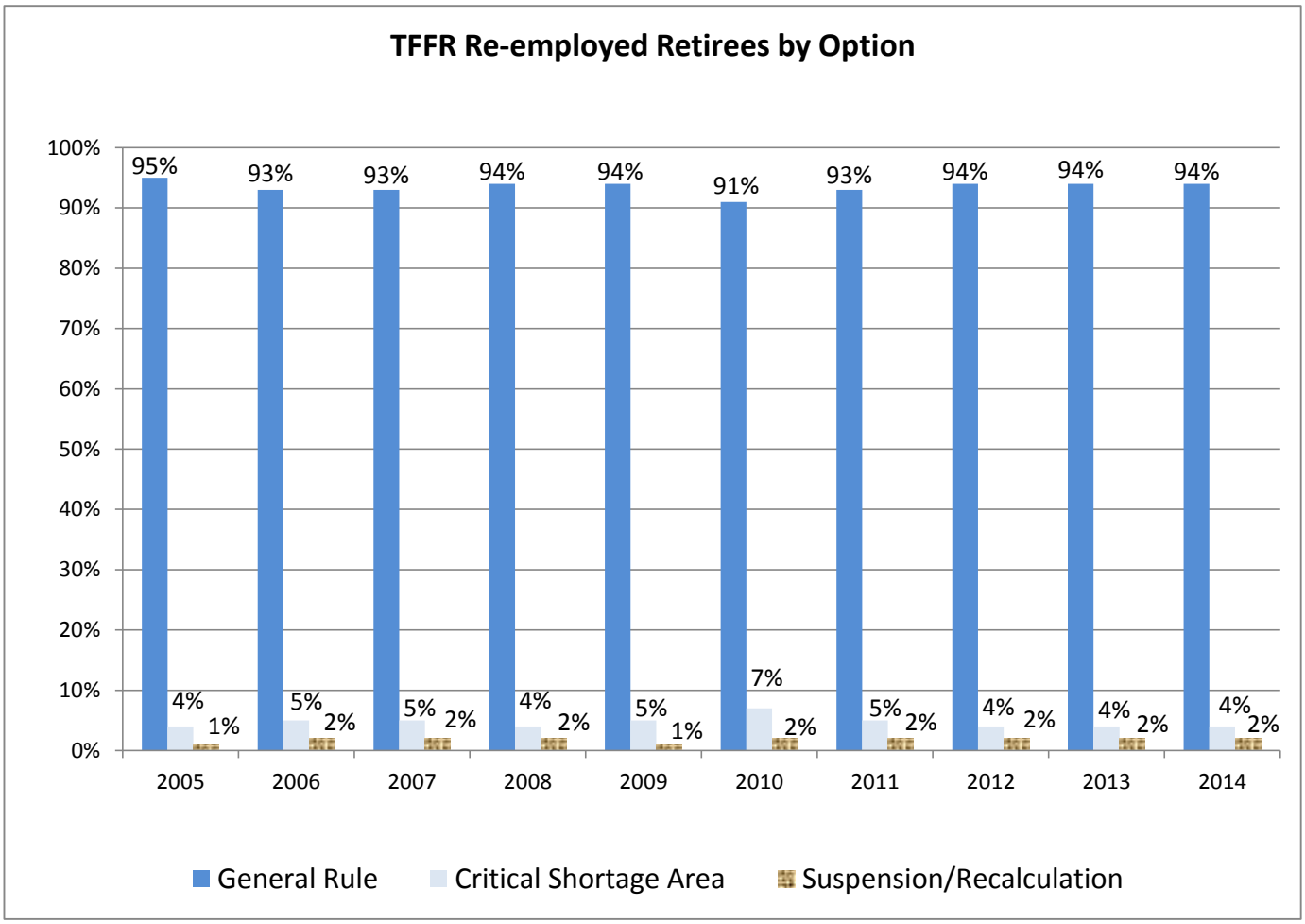
9/4/2014

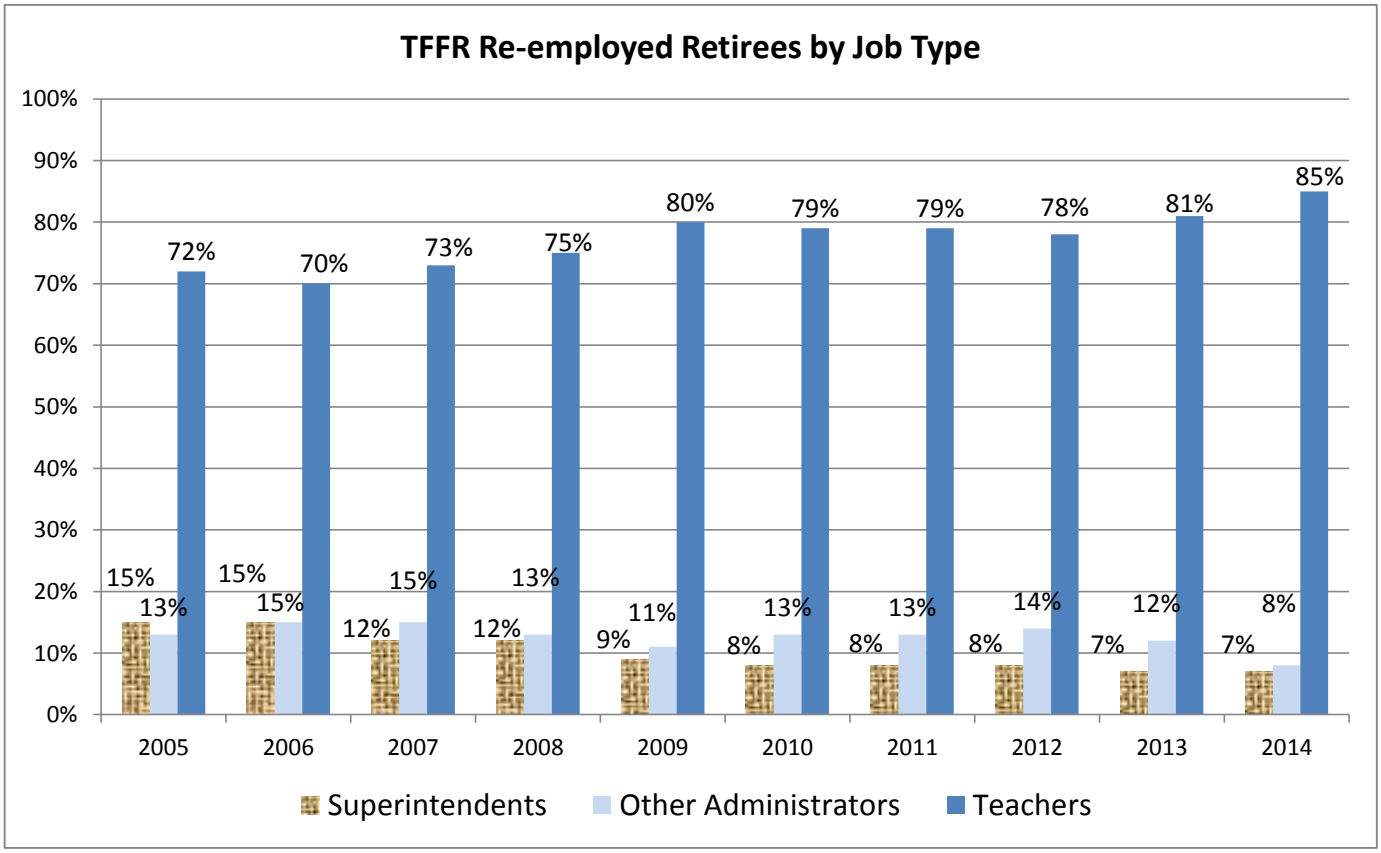

Disabilities By Year
Count
Year
0
2
4
6
8
10
12
14
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
6
5
11
13
6
8
12
5
11
1

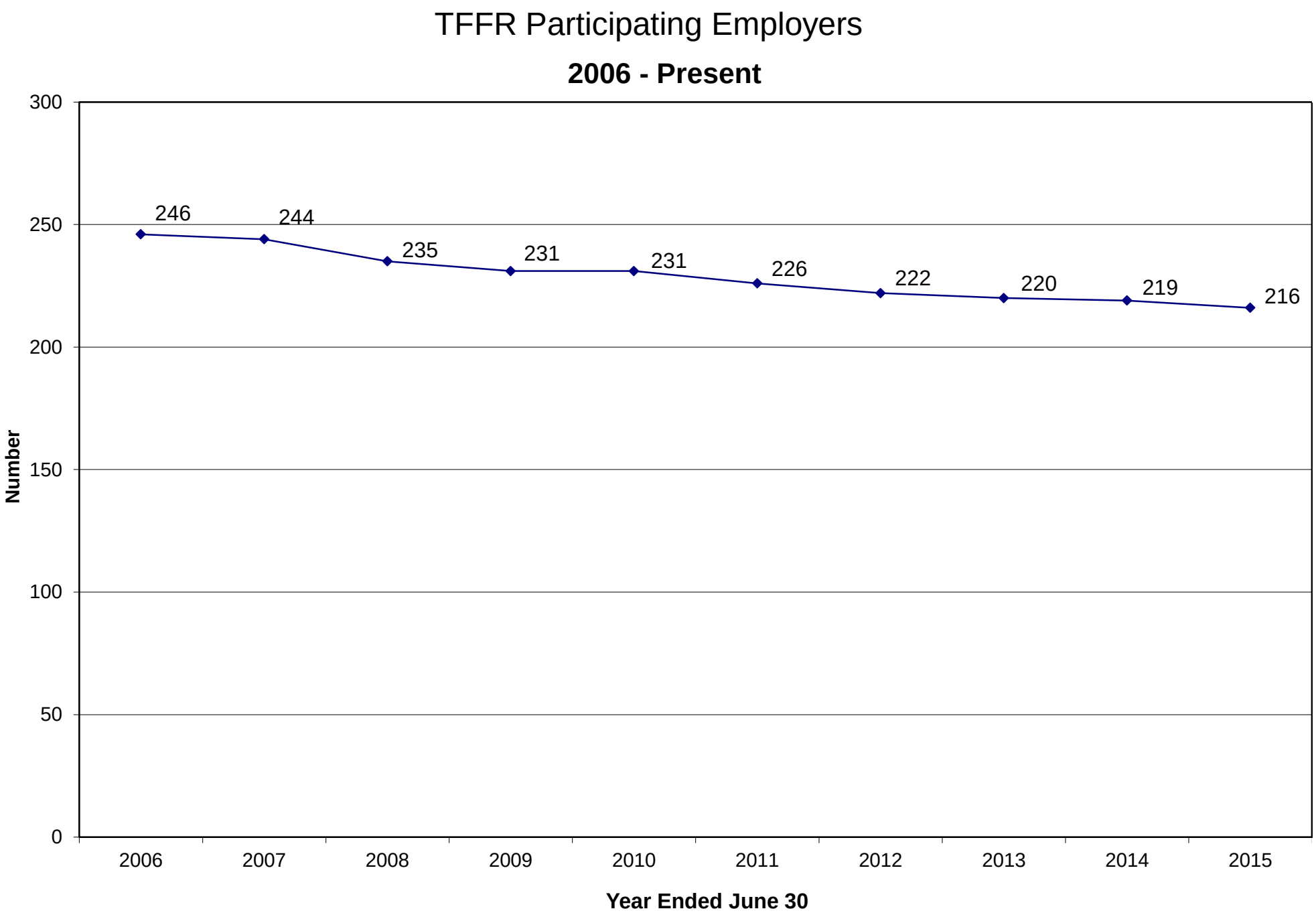
TFFR RE-EMPLOYED RETIREE STATISTICS

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Number of Re-employed Retirees	146	175	214	262	292	305	311	318	319	314
Average Age	60	60	59	60	60	61	61	62	62	62
Average Salary	$20,000	$21,000	$22,000	$22,151	$21,000	$23,400	$24,700	$24,500	$24,500	$24,200
General Rule	138	163	199	246	273	278	290	298	299	295
Critical Shortage	6	9	11	11	15	20	15	13	13	14
Suspend & Recalc	2	3	4	5	4	7	6	7	7	5
Foundation Donation	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Superintendents	22	27	26	32	26	24	24	26	24	23
Other Administrators	19	27	32	35	32	40	42	44	37	25
Teachers	105	121	156	195	234	241	245	248	258	266
Number of Employers		101	117	135	132	132	127	132	132	133
Critical Shortage Areas:										
Science	3	4	1	4	3	5	4	3	3	3
Math	0	0	2	2	5	5	3	1	1	1
Music	0	2	1	1	1	1	1	0	0	0
LD	0	0	0	0	1	2	1	2	1	3
Speech Therapist	0	0	0	0	0	0	0	0	0	0
Speech	1	0	0	0	0	0	0	0	0	0
Voc Ed (School/Work)	0	0	0	0	0	0	0	0	0	0
English	1	1	2	3	3	3	1	2	1	1
Language Arts	0	0	0	0	0	0	0	0	0	0
Industrial Arts	1	0	1	0	0	0	0	0	0	0
Foreign Language	0	1	0	0	1	2	2	2	1	1
Superintendent	0	1	1	1	0	0	0	1	1	0
Counselor	0	0	1	0	1	1	1	0	1	1
Social Studies	0	0	1	0	0	0	0	0	0	0
Consumer Science-FACS	0	0	1	0	0	0	0	0	0	1
Psychologist	0	0	0	0	0	1	1	1	1	1
Tech Ed	0	0	0	0	0	0	1	1	1	1
Principal	0	0	0	0	0	0	0	0	1	0
Business	0	0	0	0	0	0	0	0	1	1




TFFR Re-employed Retirees by Option
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
95%
93%
93%
94%
94%
91%
93%
94%
94%
94%
4%
1%
5%
2%
5%
2%
4%
2%
5%
1%
7%
2%
5%
2%
4%
2%
4%
2%
4%
2%
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
General Rule
Critical Shortage Area
Suspension/Recalculation

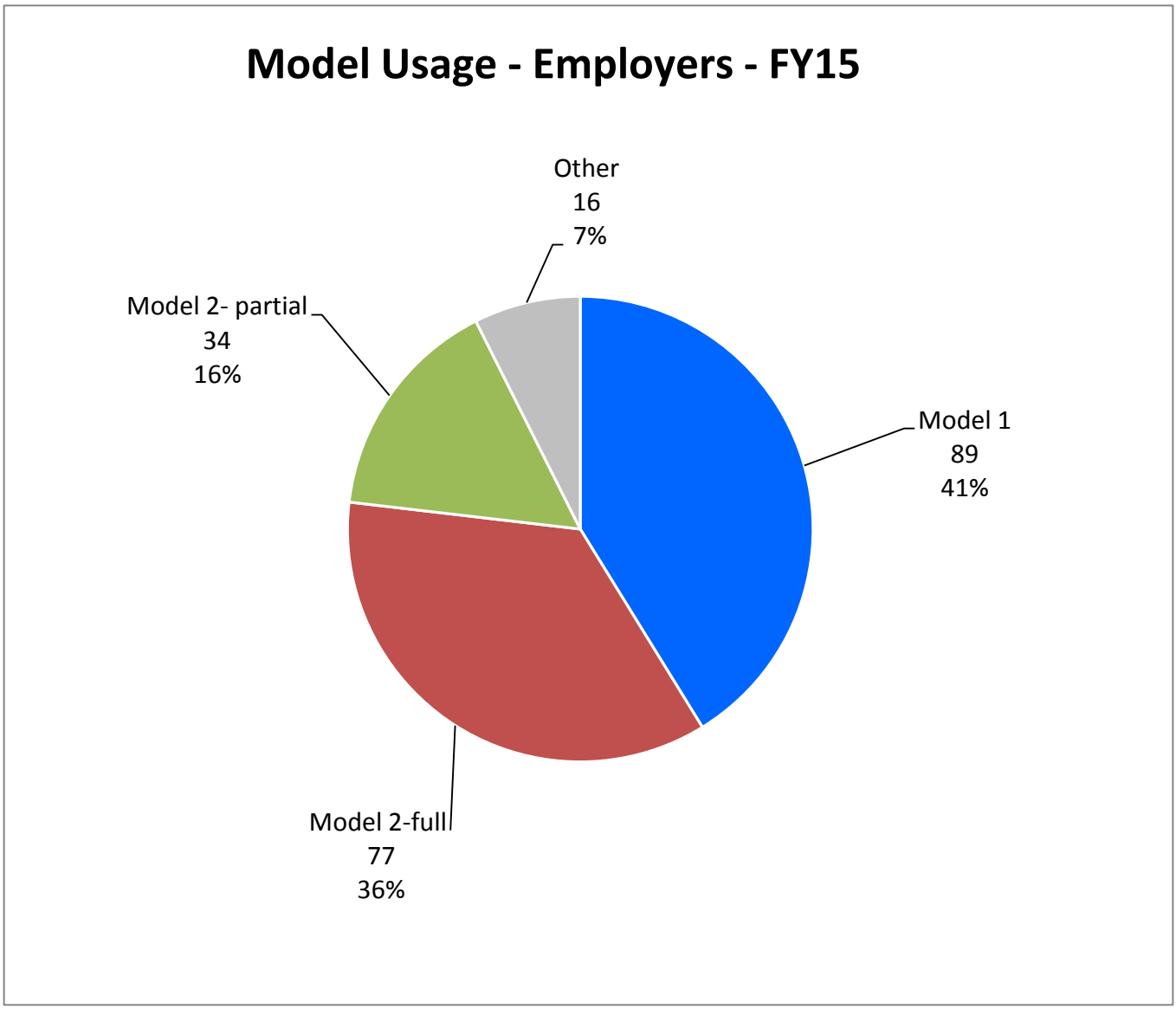

TFFR Re-employed Retirees by Job Type
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
72%
70%
73%
75%
80%
79%
79%
78%
81%
85%
15%
13%
15%
15%
12%
15%
12%
13%
9%
11%
8%
13%
8%
13%
8%
14%
7%
12%
7%
8%
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Superintendents
Other Administrators
Teachers


TFFR Participating Employers
2006 - Present
300
250
200
150
100
50
0
Number
246
244
235
231
231
226
222
220
219
216
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year Ended June 30

Model Usage 2014-2015

	Employers	
Model 1	89	41%
Model 2-full	77	36%
Model 2-partial	34	16%
Other	16	7%
Total	216	100%

Other includes Model 0, 3, 4, 5



North Dakota Teachers' Fund for Retirement

Retirement Trends and Projections

January 2015

Retirement: Now or Later?

The decision to retire is intensely personal and prompted by both non-financial and financial reasons.

- **Non-financial considerations:**
  - Health of teacher (and spouse)
  - Family issues (spouse, children, parents)
  - Personal reasons (job satisfaction vs. job stress)
  - Federal regulations
  - State and local issues (school closings, school consolidations)
- **Financial considerations:**
  - Salary vs. Retirement benefits
  - Health insurance benefits – rising cost of medical care
  - Employment in retirement
  - Inflation

TFFR Members

- TFFR member count includes number of people, not FTE's.
- TFFR members may be full time, part time, or temporary teachers, but must be licensed and contracted. Noncontracted substitute teachers are not TFFR members.

TFFR Member Categories

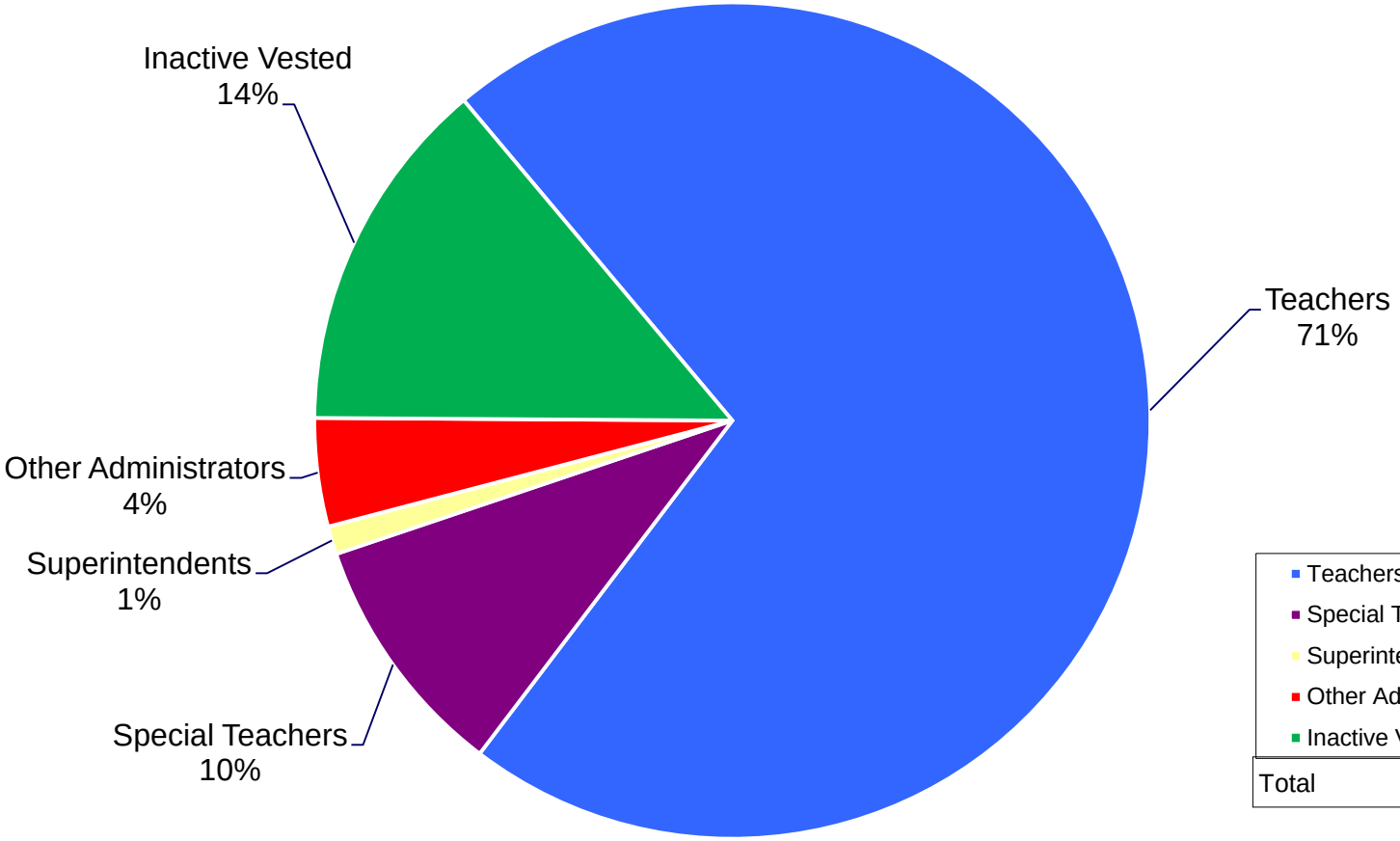
TFFR member categories are based on DPI title codes and presented according to teacher and administrator categories defined in NDCC 15.1-02-13.6.

- “Teacher” includes positions of teacher, special ed teacher, and tutor in training.
- “Special Teacher” includes positions of counselor, instructional programmer, library media specialist, pupil personnel, psychologist, speech/language pathologist.
- “Superintendent” includes only school superintendents.
- “Other Administrators” includes positions of assistant superintendent, director, assistant director, principal, assistant principal, county superintendent, and other administrative positions.

Today

Current TFFR Membership

There are 12,330 active and inactive vested TFFR members in January 2015.



Teachers	8,809
Special Teachers	1,171
Superintendents	134
Other Administrators	516
Inactive Vested	1,700
Total	12,330

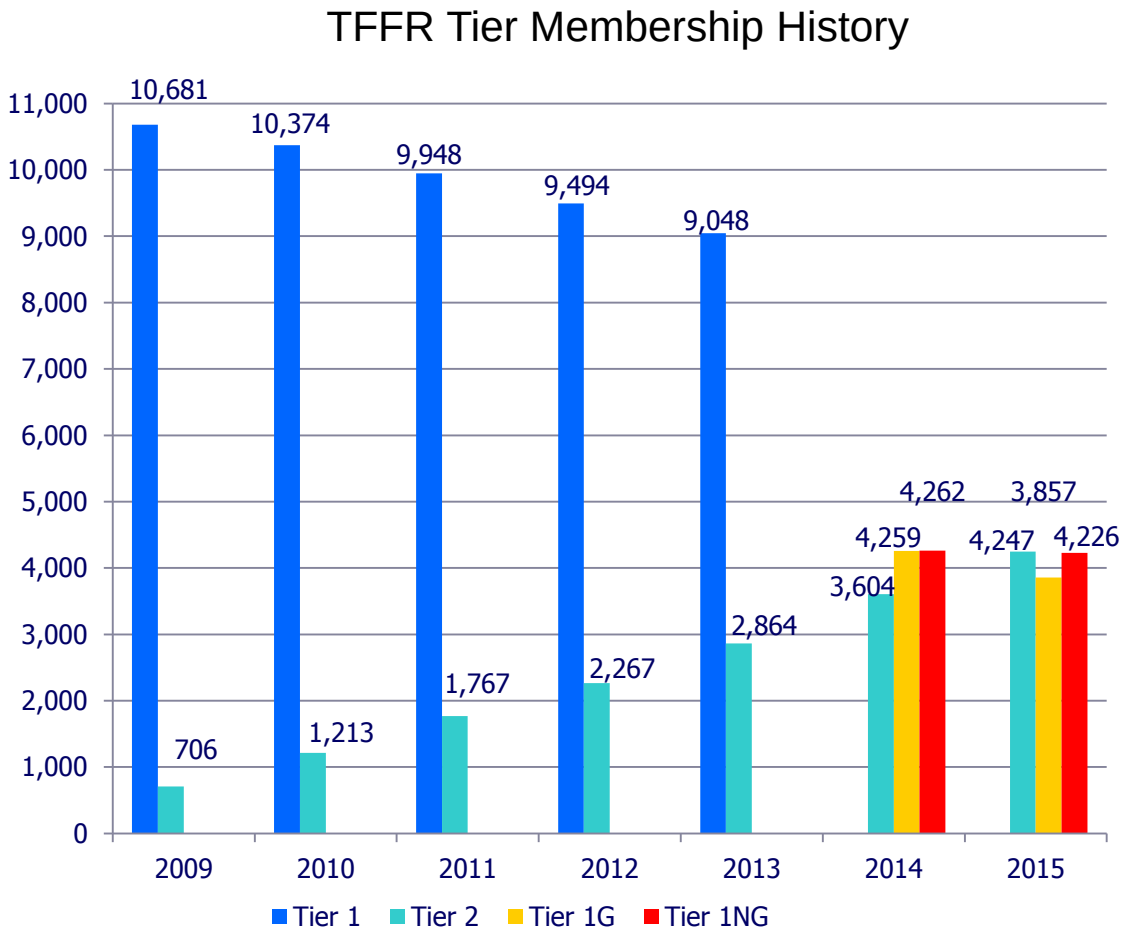
Note: There are also 740 inactive non-vested TFFR members and 7,752 retired members and beneficiaries.

Today

TFFR Tier Membership

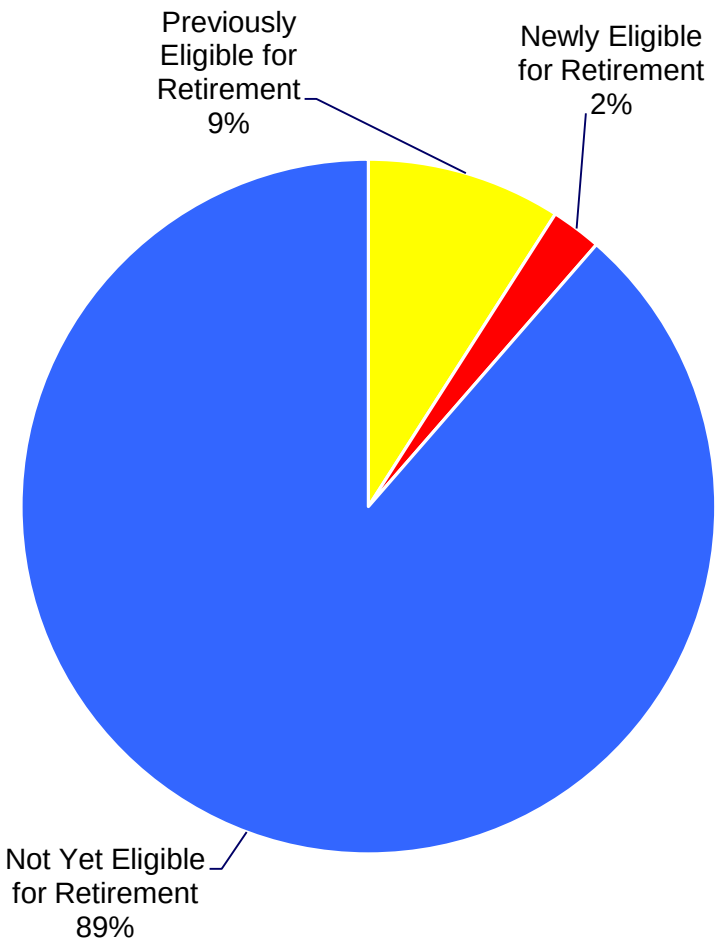
Active and inactive vested Tier membership in January 2015.

TFFR Members	Tier 1G	Tier 1NG	Tier 2	Total
Teachers	2,498	2,708	3,603	8,809
Special Teachers	371	346	454	1,171
Superintendents	77	34	23	134
Other Administrators	221	210	85	516
Inactive Vested	690	928	82	1,700
Total	3,857	4,226	4,247	12,330



Today

Current Active TFFR Membership Eligible for Retirement



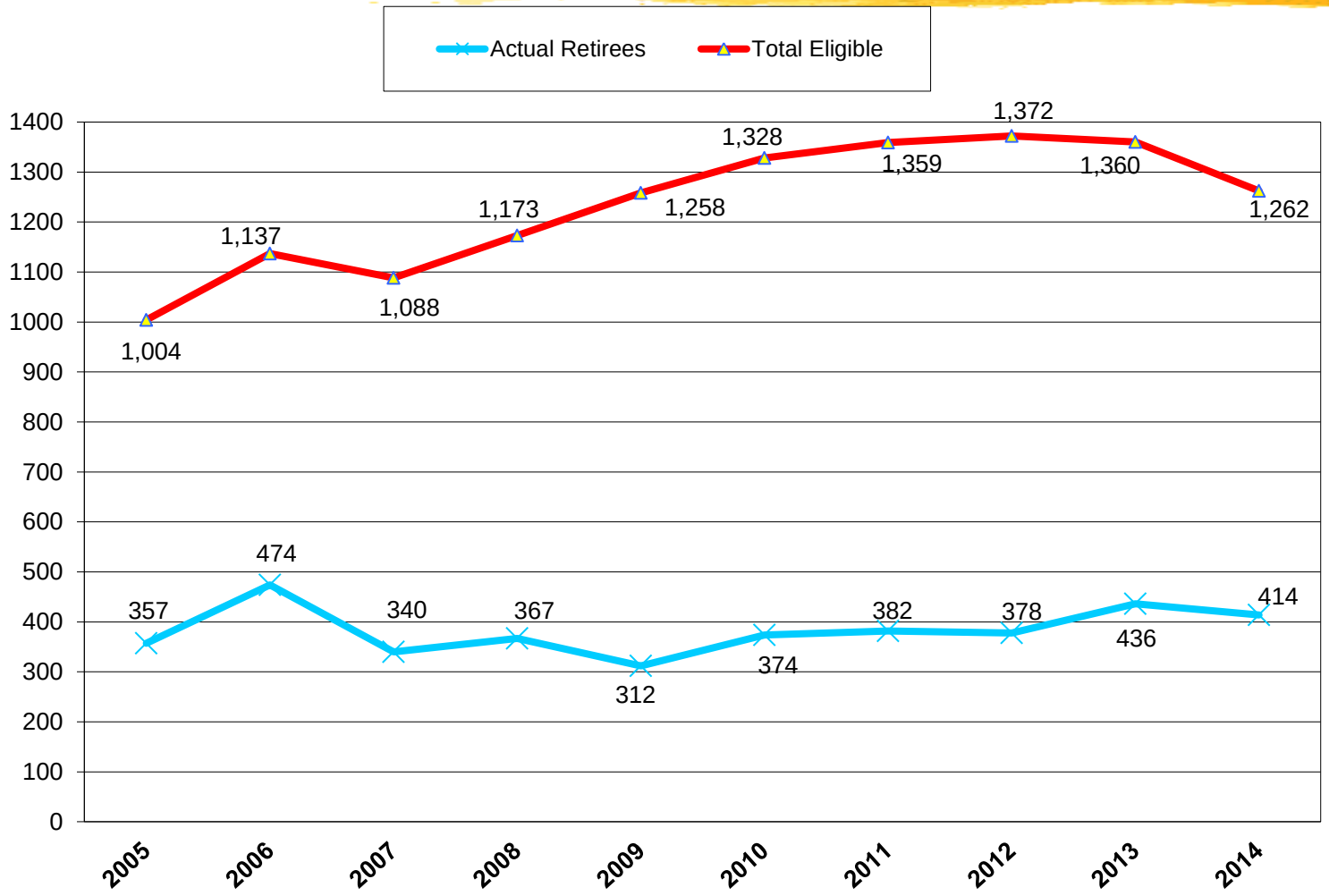
Of the 10,630 active TFFR members, 1,212 members are currently eligible to retire (11%) either under the Rule of 85, Rule of 90/Min age 60, or age 65.

Of the 1,212 active TFFR members eligible to retire, 79% are previously eligible and 21% are newly eligible in 2014-15.

Previously Eligible	962
Newly Eligible in 2014/15	250
Not Eligible	9,418
Total	10,630

Yesterday

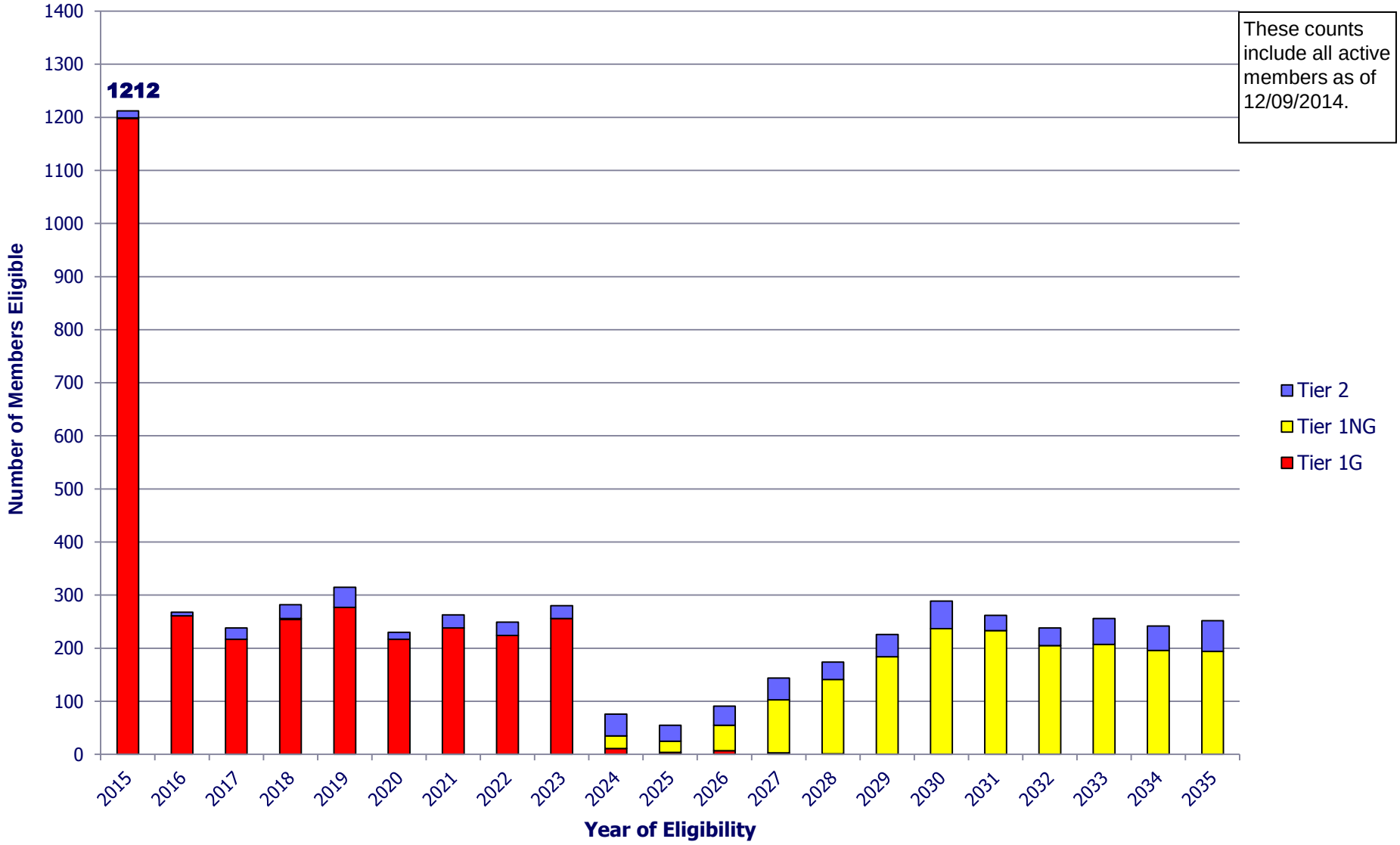
Actual Retirees and Total Eligible



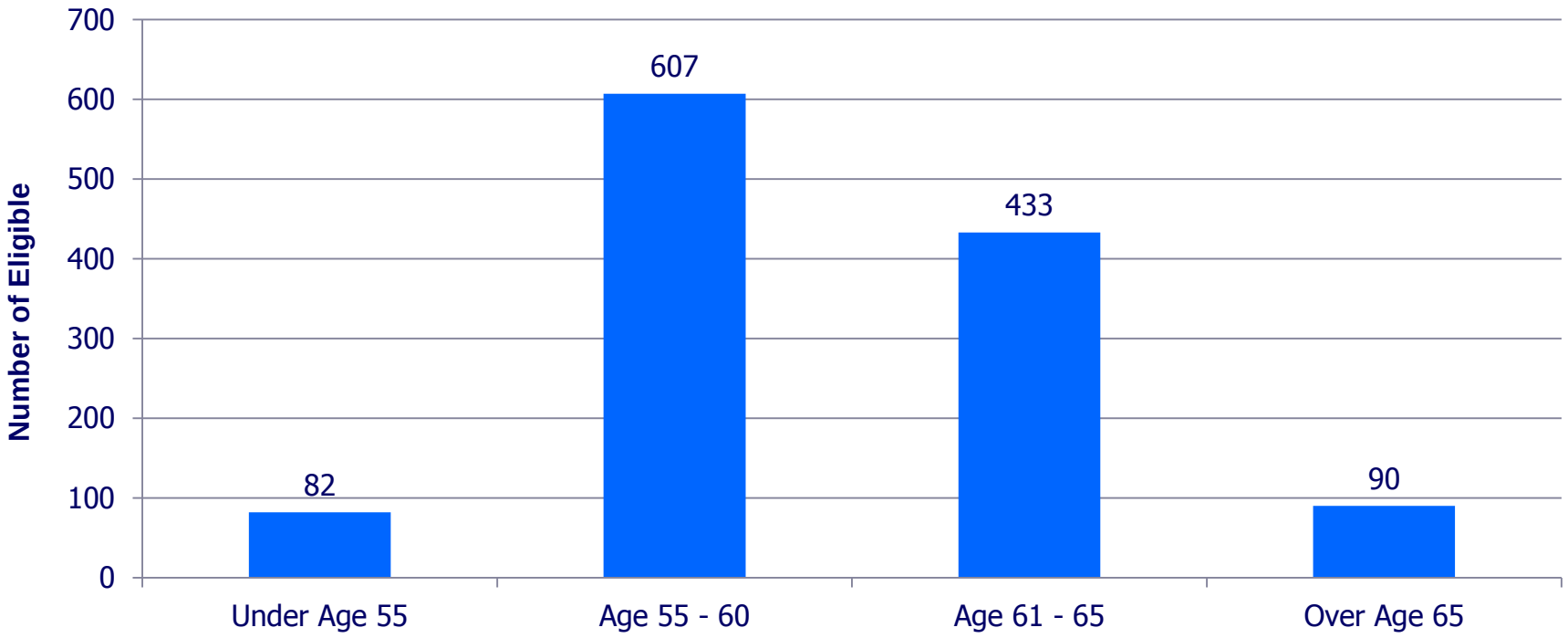
10 Year History 2005-2014

- On average, 1,200 teachers have been eligible to retire each year over the last 10 years.
- On average, 383 teachers actually retired each year, or total of over 3,830 for 10 year period.
- Approximately 32% of eligible members actually retired over the past 10 years.

TFFR Active Member Retirement Eligibility Profile
20 Year Projection

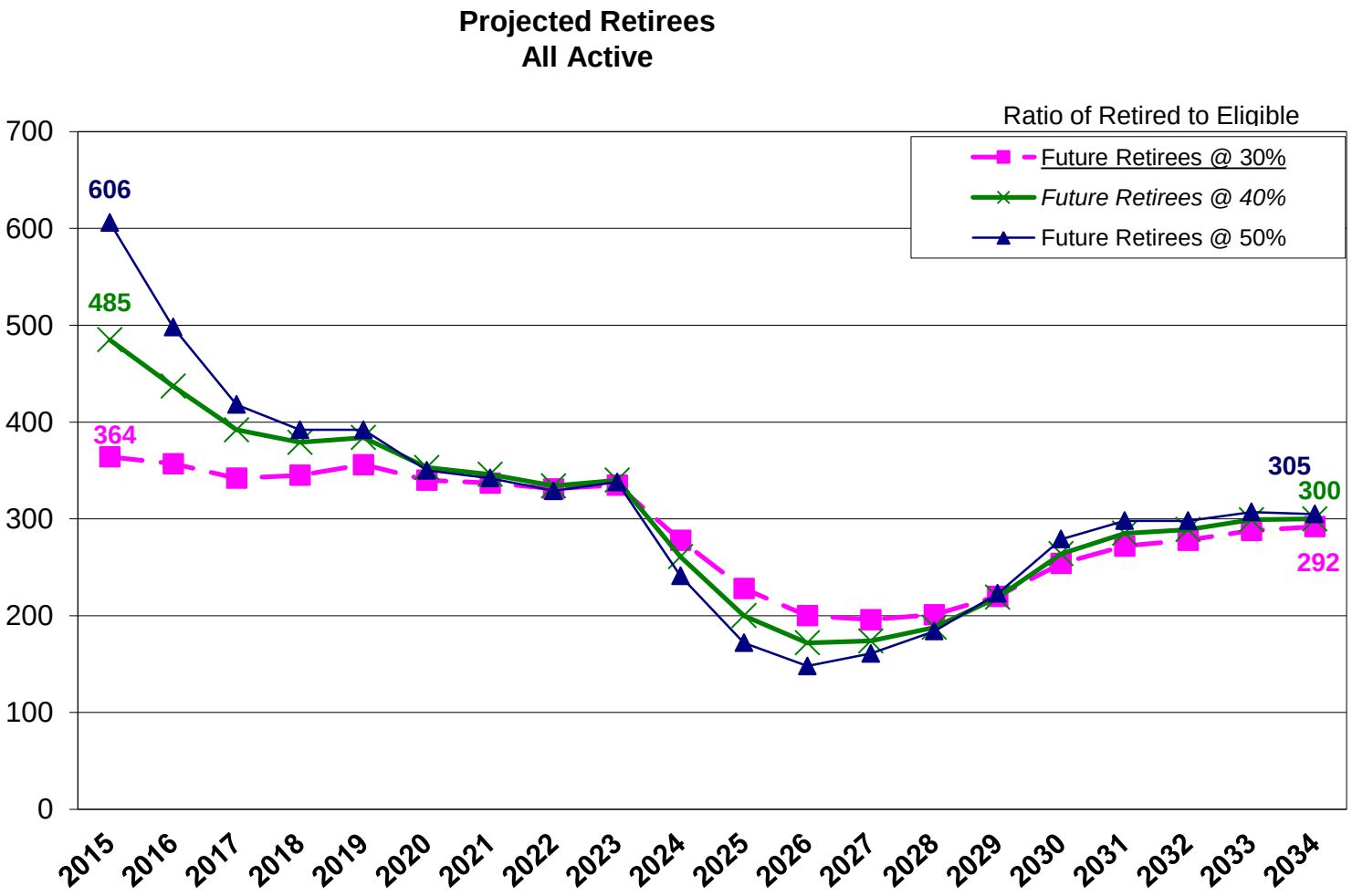


Current Eligible in 2015 by Age



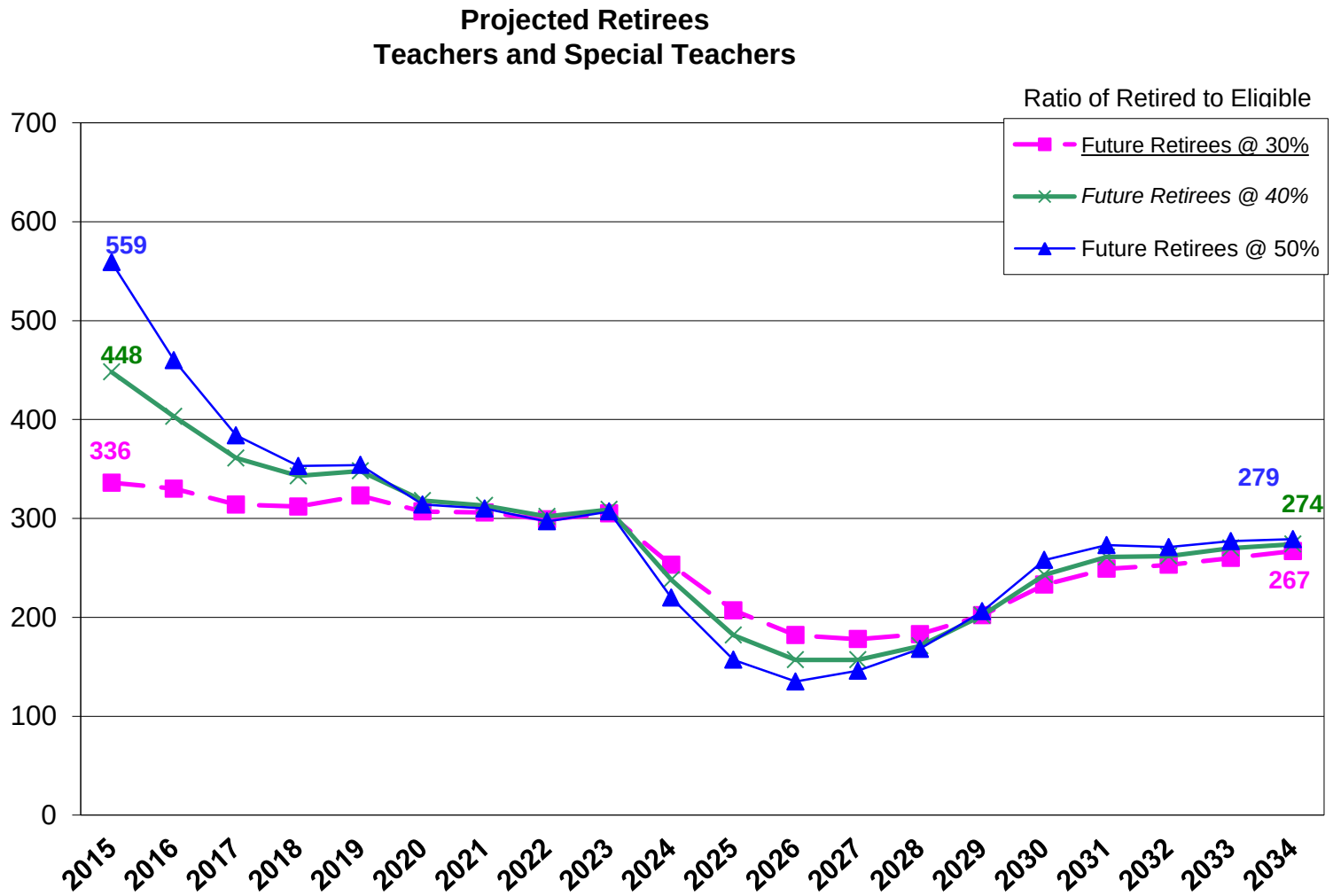
Note: Of the 1,212 total eligible, the youngest is age 52 and the oldest is age 79.

Tomorrow???



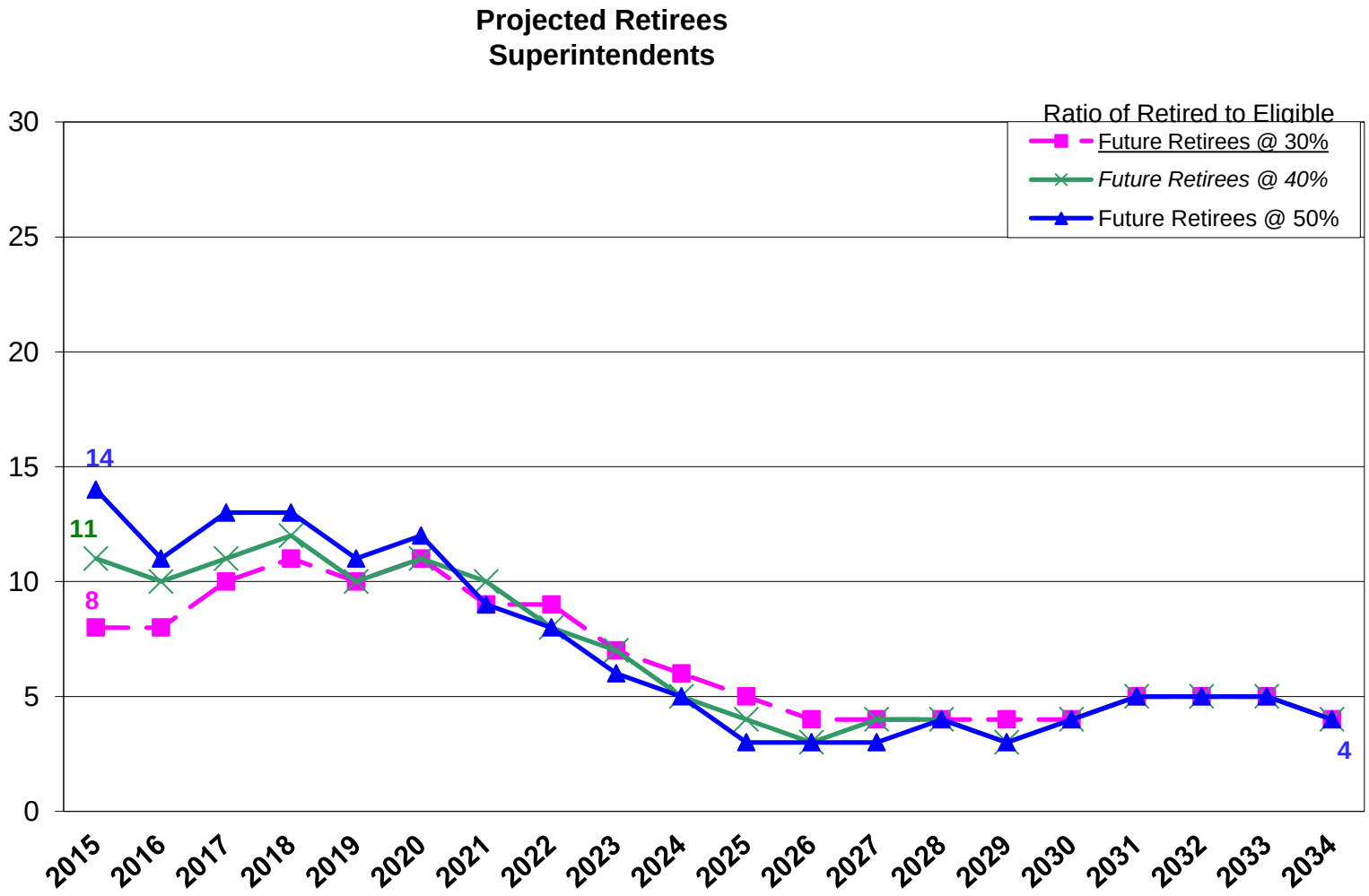
Based on ratios of 30%, 40%, and 50% of actual retirements to eligible retirements, the number of active members projected to retire in the next 20 years.

Tomorrow???



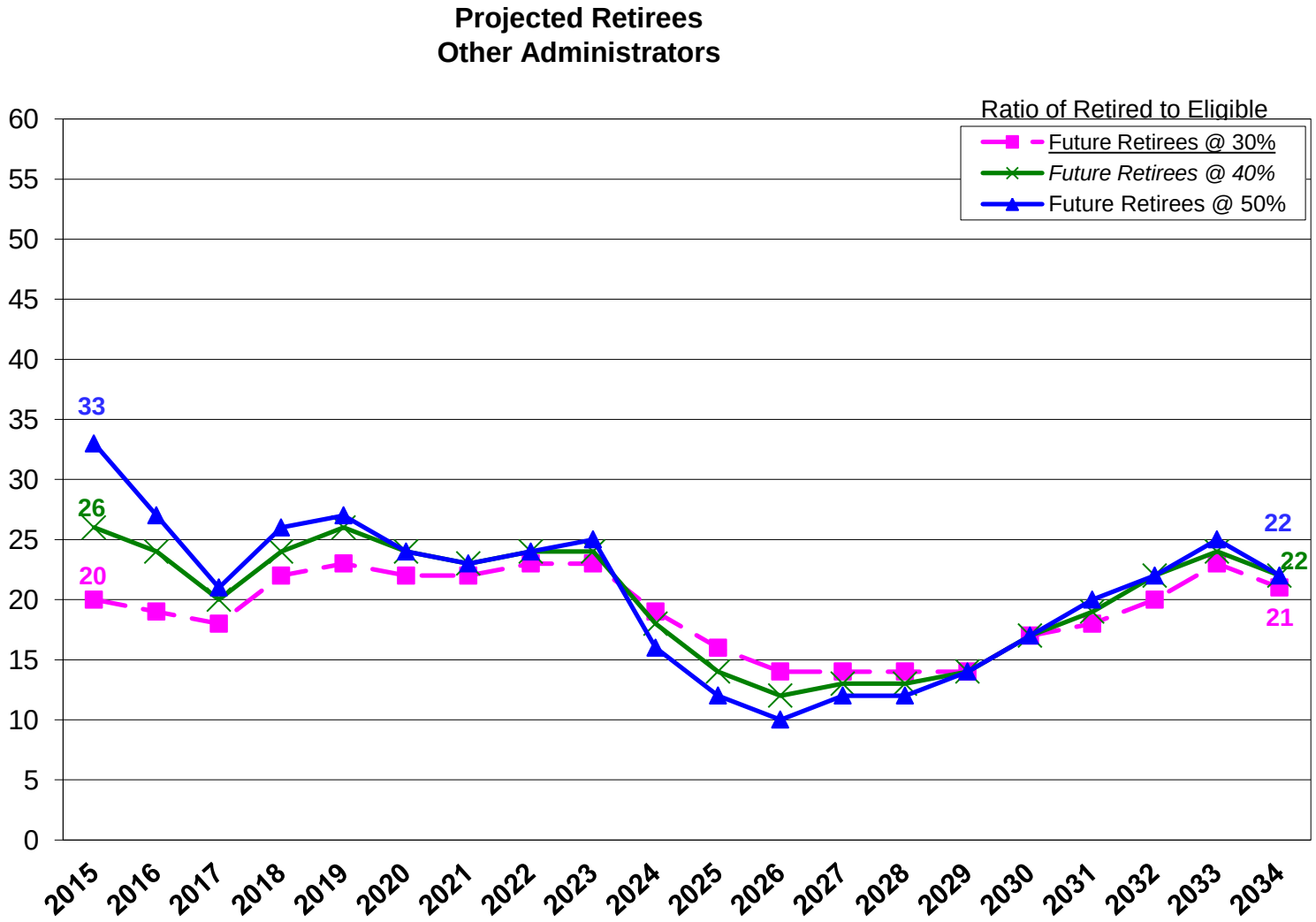
Based on ratios of 30%, 40%, and 50% of actual retirements to eligible retirements, the number of teachers and special teachers projected to retire in the next 20 years.

Tomorrow???



Based on ratios of 30%, 40%, and 50% of actual retire-ments to eligible retirements, the number of superintendents projected to retire in the next 20 years.

Tomorrow???



Based on ratios of 30%, 40%, and 50% of actual retire-ments to eligible retirements, the number of other administrators projected to retire in the next 20 years.

Summary

Based on ratios of 30% and 40% of actual retirements to eligible retirements, approximately 3,400 to 3,700 active members are projected to retire in the next 10 years which averages about 370 per year.

	Members	# Retire		Avg/Yr	
		30%	40%	30%	40%
Teachers and Special Teachers	9,980	3,085	3,383	309	338
Superintendents	134	89	95	9	10
Other Administrators	516	211	233	21	23
Total Active Members	10,630	3,385	3,711	339	371

Note: All retirement projections are estimates only.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **2014 CAFR and PPCC Award**

In December 2014, our office sent TFFR board members a link to the 2014 NDRIO Comprehensive Annual Financial Report (CAFR) which is posted on the NDRIO website. http://www.nd.gov/rio/SIB/Publications/CAFR/2014AnnualReport.pdf
The report provides a detailed look at investment, financial, actuarial, and statistical information about the TFFR and SIB programs.

Please notice that the Government Finance Officers Association (GFOA) has awarded a Certificate of Achievement for Excellence in Financial Reporting to RIO for 15 years. In order to receive the award, the CAFR must satisfy both generally accepted accounting principles and applicable legal requirements. The 2014 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 once again received the 2014 Public Pension Standards Award for Funding and Administration from the Public Pension Coordinating Council (PPCC). To receive the award, the retirement system must certify that it meets specific standards for a comprehensive benefit program, actuarial valuations, financial reporting, investments, communications to members, and funding adequacy. TFFR has received a PPCC Award since 1992.

If you have any questions about the information included in the CAFR, please let us know.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **Retirement Job Vacancy Update**

TFFR Retirement Program Specialist, Denise Weeks, left RIO employment on December 19, 2014 to accept a job opportunity in the private sector. She was a wonderful employee and provided high quality service to active and retired members of the fund for 14 years. She was an asset to our agency, and will be greatly missed.

Shelly is working closely with HRMS to fill the vacant position. The position was posted, advertised, and 5 applicants met the minimum qualifications for the position. Dave, Shelly, and I plan to interview applicants next week.

While we are searching for her replacement, we are very fortunate to have dedicated and experienced retirement program staff members willing to pick up the additional duties: Paula Brown, Retirement Program Specialist; Estelle Kirchoffner, Membership Specialist; and Shelly Schumacher, Retirement Program Manager. We greatly appreciate their efforts.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **2015-16 Board Meeting Schedule – DRAFT**

TFFR Board policy C-2 requires the Board to conduct a minimum of six board meetings each year. Board meetings will generally be scheduled for the day preceding the SIB meetings beginning in July of each year, unless a different day is determined. Of course, special meetings may also be called as needed, or this schedule could be adjusted if warranted.

Since 2015-16 does not include a legislative session, here are suggested meeting dates. TFFR meetings are scheduled for Thursday's at 1 pm (the day preceding SIB meetings), and I avoided August and May (first and last weeks of school).

July 23, 2015

September 24, 2015

October 22, 2015

January 21, 2016

March 17, 2016

April 21, 2016

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **January 15, 2015**

SUBJ: **Trustee Education**

Here are some dates and information for various 2015 pension trustee educational opportunities. If you are interested in attending any of these, or other conferences or training sessions, please contact Bonnie Heit or Fay.

- **National Council on Teacher Retirement (NCTR)**
  http://www.nctr.org/events/

Trustee Workshop	Usually late July 2015	TBD
Annual Conference	Oct. 10-14, 2015	La Jolla, CA

*Registration material is not yet available, but will be sent to you.

- **International Foundation of Employee Benefit Plans (IFEBP)**
  http://www.ifebp.org/education/schedule/Pages/PEschedule.aspx#k=#s=21

*See attached 2015 public sector training schedule.

- **Callan College**
  https://www.callan.com/education/college/

National Conference	Jan 26-28, 2015	San Francisco, CA
Intro to Investments	April 14-15, 2015	Atlanta, GA
	July 21-22, 2015	San Francisco, CA
	Oct 27-28, 2015	Chicago, IL

Enclosures

2015 Public Sector Program Schedule

Date	Program	Location
February 23-28	Certificate Series | www.ifebp.org/certificateseries	Lake Buena Vista (Orlando), Florida
March 9-11	Investments Institute | www.ifebp.org/investments	Rancho Mirage, California
April 13-15	Health Care Management Conference | www.ifebp.org/healthcare	Santa Monica, California
April 27-30	Portfolio Concepts and Management | www.ifebp.org/wharton	Philadelphia, Pennsylvania
May 4-5	Washington Legislative Update | www.ifebp.org/washington	Washington, D.C.
June 9-10	Certificate of Achievement in Public Plan Policy (CAPPP®) Pensions and Health Part I www.ifebp.org/cappp	Chicago, Illinois
June 11-12	Certificate of Achievement in Public Plan Policy (CAPPP®) Pensions and Health Part II www.ifebp.org/cappp	Chicago, Illinois
June 13-14	Administrators Masters Program (AMP®) | www.ifebp.org/amp	San Francisco, California
June 15-17	Accounting and Auditing Institute for Employee Benefit Plans www.ifebp.org/accountants	San Francisco, California
June 16-17	Benefits Conference for Public Employees | www.ifebp.org/publicemployee	Albany, New York
July 20-25	Certificate Series | www.ifebp.org/certificateseries	Chicago, Illinois
July 27-29	Alternative Investment Strategies (Formerly Hedge Funds, Real Estate and Other Alternative Investments) | www.ifebp.org/wharton	San Francisco, California
September 28-October 1	Advanced Investments Management | www.ifebp.org/wharton	Philadelphia, Pennsylvania
October 6-7	Certificate of Achievement in Public Plan Policy (CAPPP®) Pensions and Health Part I www.ifebp.org/cappp	Providence, Rhode Island
October 8-9	Certificate of Achievement in Public Plan Policy (CAPPP®) Pensions and Health Part II www.ifebp.org/cappp	Providence, Rhode Island
October 12-17	Certificate Series | www.ifebp.org/certificateseries	Las Vegas, Nevada
November 7-8	Administrators Masters Program (AMP®) | www.ifebp.org/amp	Honolulu, Hawaii
November 7-8	Trustees Masters Program (TMP) | www.ifebp.org/tmp	Honolulu, Hawaii
November 8	TMP Advanced Leadership Summit | www.ifebp.org/tmpsummit	Honolulu, Hawaii
November 8-11	**61st Annual Employee Benefits Conference | www.ifebp.org/usannual**	**Honolulu, Hawaii**

CEBS Continuing Professional Education (CPE) Credit

Educational sessions at the International Foundation programs may qualify for CEBS continuing professional education (CPE) credit. For CPE inquiries, please visit www.cebscpe.org or contact the CEBS Customer Service Department at (800) 449-2327, option 3 or e-mail cebscpe@ifebp.org.

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Introduction to Investments

- Overview
- Agenda
- Cost
- Register

This session familiarizes fund sponsor trustees, staff, and asset management advisors with basic investment theory, terminology, and practices. It lasts one-and-a-half days and is designed for individuals who have less than two years of experience with asset-management oversight and/or support responsibilities.

Participants will gain a fundamental understanding of the basic types of institutional funds, including their purpose within the structure of investment programs. The session includes:

- A description of the different parties involved in the investment management process, including their roles and responsibilities;
- A brief outline of the types and characteristics of different plans (i.e. defined benefit, defined contribution, endowments, foundations, and operating funds);
- An introduction to fiduciary issues as they pertain to fund management and oversight;
- An overview of capital market theory, characteristics of various asset classes, and the processes by which fiduciaries implement their investment sessions.

Upcoming Sessions

April 14–15, 2015
Atlanta

July 21–22, 2015
San Francisco

October 27–28, 2015
Chicago

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Debate continues on state employees and teachers retirement

BY DAVE THOMPSON, PRAIRIE PUBLIC BROADCASTING

A Senate committee is considering a change in the state's foundation aid stabilization fund.

It would allow the Legislature to take a part of that fund for low-interest school construction loans – and to pay off some unfunded state retirement benefits – including teachers' retirement.

The North Dakota School Boards Association supports the proposal – and says the payment of retirement benefits to teachers under the "defined benefit" plan will lead to further discussions about whether teachers should be under a "defined contribution" plan. Association executive director Jon Martinson says that's a conversation worth having.

"We have a teacher shortage," said Martinson. "And in terms of recruiting and retaining teachers, we need to get the salaries up. Younger teachers are more interested in what we can put in their pockets, rather than have them look 35 years out."

North Dakota United represents teachers and public employees. NDU president Nick Archuleta says he doesn't support using that fund to pay off retirement plans.

"We believe there are some people who do not like the defined benefit plan," said Archuleta. "They would take the money, fully fund those things, then cut off any new teachers or employees from joining a defined benefit plan. That would be detrimental to our state, our public employees and teachers."

The measure would be a Constitutional change – and if the Legislature approves, would go on the ballot in 2016.

Groups advocate for state fix for teachers' retirement fund

By Helmut Schmidt on Jan 11, 2015 at 11:50 p.m., Fargo Forum

Teachers fund payment levels in recent years have strained budgets and made contract talks tougher, said Fargo School Board member Jim Johnson.

With the Fargo School District paying 12.75 percent of total salary into the fund and teachers paying 11.75 percent of their pay, the costs are huge, he said.

In 2012, the Fargo School District made $5.2 million in teachers fund contributions; by 2014, that had grown to $6.8 million. District employees in the Teachers Fund For Retirement system – about 70 percent of staff – paid $4.6 million in 2012 and more than $6.1 million in 2014. Total payments rose from $9.8 million in 2012 to $12.9 million in 2014, records show.

“It’s a pretty significant number,” Johnson said.

Johnson and the school boards group want lawmakers to consider one or more of several options to rebuild the teachers’ retirement fund. They include:

- A series of catch-up allocations from the state’s general fund sufficient to fund TFFR at 100 percent. “It seems to me that they have a fund balance in Bismarck,” Johnson said. It “makes tremendous sense to me.”
- A separate state appropriation that gives school districts an annual amount equal to 5 percent of their certified staff payroll.
- A rollback to pre-2008 TFFR contribution levels, when the plan was funded at 70 percent of its long-term liabilities. The state would pay the post-2008 difference in contribution rates until the plan was 100 percent funded.
- An agreement to study the current funding system for TFFR and explore other solutions.

Big slice of WF budget

The West Fargo School Board hasn’t taken an official position on making the teachers fund whole, Business Manager Mark Lemer said.

“Obviously, any support from the state to shore up that fund would be welcomed,” he said.

West Fargo Public Schools takes on even a larger percentage of TFFR expenses than many other districts by paying both the employer and employee contributions, Lemer said.

While the employer and employee percentage contributions add up to 24.5 percent, Lemer said a formula used by North Dakota’s Retirement and Investment Office handles the decision of districts to pay all or part of their employees’ TFFR contributions as if it was done in lieu of a raise. That means West Fargo pays an effective rate of 27.76 percent, he said.

As of June 30, 2013, West Fargo’s TFFR contribution was $5,816,072. In June 30, 2013, it rose to $7,832,562, and by June 30, 2014, it was $8,913,376, records show. While the district has hired more teachers as it opens new schools, the rising contribution rates also come into play, Lemer said.

Rebuilding the fund

In 2008, the school district TFFR contribution rate was 8.75 percent of salary and employees paid 7.75 percent, unless their school district paid all or part of their contribution.

In 2011, a bill signed into law raised contribution rates 4 percent for school districts and employees in two 2 percent increments to rebuild the fund. In 2013, lawmakers raised the requirement for actuarial solvency from 90 percent to 100 percent of the fund.

According to the Retirement Investment Office, which oversees TFFR, the funded level of the retirement pool was 62 percent as of July 1.

Johnson said other factors besides the market meltdown and recession helped deplete TFFR:

- Payouts have increased because more people are retiring.
- Retirement payments were increased pre-recession because at the time, "there was so much money in the kitty," Johnson said. That compounded the problem when the correction occurred, he said.
- Retirees are simply living longer and over time collecting more in total pension payments.

"It's been a confluence of many things that has led us to where we are right now."

Johnson said another fix could be considered in the long term for TFFR.

Current TFFR participants could be grandfathered in with the current defined benefit plan. A defined contribution retirement offering could be developed for new hires, like 401(k) plans used in private industry, he said.

"So, this problem, or this huge, huge expense item, doesn't continue to grow over time as we add new staff and teachers," Johnson said of the current defined benefit system.

Lemer said changing the current system may not be necessary as long as any long-term payouts are supported by payments made into the TFFR fund.

"I don't know if we need to be afraid of a defined benefit plan, but we need sound actuarial support to be sure over time the fund stays funded," Lemer said. "Right now, we have an imbalance."

Johnson also said most retirement plans are not funded at 100 percent of actuarial solvency. He said the Legislature might roll back the TFFR funding requirement, perhaps to 75 percent.

At the current rates of return, Johnson figures it will be 25 or more years before TFFR is 100 percent funded and rates are returned to pre-2008 levels as written into law.

That is not far off Retirement Investment Office estimates.

Shelly Schumacher, the retirement program manager for RIO, said 8 percent annual investment growth puts the 100 percent funding date out 20 years, perhaps in 2034 or 2035.

A more aggressive 9 percent return might have the fund recover by 2027 or 2028, she said.

But a 7 percent return means the TFFR fund wouldn't recover for much, much longer, she said.

"Everything at this point is still leaning toward that 8 percent return," Schumacher said.

Jon Martinson, executive director of the school boards group, said fixing the teachers retirement fund is an important issue for the state's school districts during the 2015 legislative session.

“We will certainly work to have something happen in the session,” Martinson said.

Martinson and Lemer said the TFFR plan helps keep experienced teachers in education. That’s important with a shortage of teachers in North Dakota, Martinson said.

Virginia Retirement System funding improving

Michael Marts | Richmond Times-Dispatch | Posted: Friday, October 17, 2014 11:23 am

The funding of Virginia’s pension plans for state employees and teachers improved in the last fiscal year for the first time since 2008, before the recession cut deeply into the retirement system’s investments.

All five major pension plans managed by the Virginia Retirement System showed gains in funded status, the actuary for the system reported Thursday.

The state employee plan was 67.9 percent funded on June 30, up from 65.1 percent the previous year, and the teachers plan rose to 65.4 percent from 62.1 percent, based on an actuarial calculation that smooths gains and losses over five years.

Based on current market value, both plans were funded at more than 74 and 71 percent, respectively, at the end of the last fiscal year.

The improved funded status reflects a 15.7 percent increase in investment income in the last fiscal year for the $65 billion retirement system and potentially reduces pressure on contributions that state and local governments and school systems must make to pension plans for more than 600,000 active, retired and inactive employees.

“For us, what’s important is the trend is in the right direction,” said Jose I. Fernandez, principal and consulting actuary for Cavanaugh Macdonald Consulting, LLC, which advises the VRS on the rates necessary to fund current retirement costs and long-term liabilities for public employees.

The actuarial analysis presented Thursday will not be used to set contribution rates for state and local governments, which are paying into the pension plans based on rates the General Assembly adopted this year for the two-year state budget that began July 1. Employees also contribute up to 5 percent of their pay to their pensions.

VRS officials top the list of highest paid state employees

The Virginia Retirement System's chief investment officer and its former chief, who is now second in command, were the state's highest-paid employees last year, according to a list of salaries…

But the analysis shows a reduction in the contribution rates that would be required to fully fund the pension plans, not only for state employees and teachers, but also for state police, other sworn law officers and judges.

The so-called “informational rates” still are higher than the rates actually funded in this biennium by the assembly, which is moving under a graduated schedule to fully fund pension obligations by the 2018-20 biennium.

The current budget funds the contributions for state employees and the state’s share of teacher retirement at about 80 percent of the level recommended by the VRS board a year ago, based on the actuary’s analysis then. As a result, the system is getting about $798 million less in state and local contributions than required under the board-approved rates.

However, the underfunding of contributions was more than offset by $2.1 billion in gains on VRS investments, as well as cost-of-living increases that were less than expected.

The analysis also reflects the required payback of $1.1 billion in deferred state and local pension contributions in the 2010-12 budget. The state has repaid about $250 million of the deferred obligations with interest, but will owe about $851 million over the next seven years.

The net result was a reduction in the system’s unfunded liabilities from almost $24 billion a year ago to about $22.6 billion now. The liability falls by almost $858 million for the teachers plan, the largest retirement plan with about 147,000 active employees and more than 81,000 retirees. But the plan still had an unfunded liability of about $14.3 billion on June 30.

Those liabilities are based on an actuarial analysis that smooths investment gains and losses over five years to protect the VRS assets from stock market volatility. If the analysis is based on market value, as required by new rules from the Government Accounting Standards Board, the unfunded liability for all VRS plans falls to $18.7 billion, and $11.9 billion for the teachers pension plan.

“All good news,” said Mitchell L. Nason, a Prince William County firefighter who chairs the actuarial and benefits committee for the VRS board of trustees.

The latest actuarial analysis also reflects, for the first time, the results of a hybrid retirement plan the assembly adopted in 2012 for most state and local government employees; public safety was exempted. The plan, combining a defined-benefit pension with a defined, 401(k)-type of contribution, took effect Jan. 1 for new hires.

More than 3,300 state employees and teachers joined the hybrid plan in the first six months of this year. Combined with employees hired after initial pension reforms took effect in mid-2010, the number of employees in all pension reform plans exceeds 25,000 state workers and about 45,000 teachers, who will receive smaller pensions when they retire than those hired before them.

“Looking long term, what is anticipated is lower costs for the plans,” Fernandez said

Arizona pension chief Matson cites progress, sees benefit hike

Years of belt-tightening and increased saving rates, coupled with solid investment returns, have put Arizona's largest pension fund in a position to start raising benefits for the first time in a decade, though it won't be immediate.

Paul Matson, chief executive of the $32 billion Arizona State Retirement System, said he expects retirees could see a permanent benefit increase, of undetermined size, sometime in the next three or four years. The last increase for the pension fund and its more than half-a-million members came in 2005. Benefit hikes are made possible by excess investment earnings, largely from the stock market, he said. Similarly, an improving financial backdrop for the pension system also could mean that more than 200,000 public-sector workers in Arizona — along with the cities, counties, state agencies, school districts and other entities that employ them — could start paying slightly lower contributions to support the system, Matson added.

These contribution rates paid by workers and employers might rise one more time, but that likely would be followed by a year or two of no change, with decreases beginning after that, Matson said. When and if contributions start to decline, they will be gradual — likely averaging 0.2 percent to 0.3 percent annually stretched over perhaps two decades.

At a time when public pension programs including the Arizona State Retirement System remain significantly underfunded, Matson's assessment was surprisingly upbeat. But recent fixes and long-term trends have put the system in much better shape, he said.

"We have a strong, healthy system that's fully sustainable on the retirement and health sides," he said in an interview with *The Arizona Republic*. The program provides retirement, health and long-term disability benefits.

Matson cited three main reasons for the improvement:

• Changes in certain benefit formulas have reduced the system's liabilities. Working with the Legislature over the past decade, the Arizona State Retirement System has closed loopholes and made other adjustments. One involved new workers joining the system. In prior years, many new hires were allowed to purchase retirement-service credits at a cost of about 40 cents on the dollar. That unsustainable practice and about a dozen others have been restricted or eliminated, Matson said.

• Contribution increases have boosted the system's cash flow and assets. Employees and their employers each currently make contributions into the system equivalent to 11.6 percent of worker salary. That's up from an unsustainably low 2.5 percent a dozen years ago. As noted, the recent trend of contribution hikes eventually will be followed by modest decreases, before contributions level out around 6.75 percent many years down the road.

• Higher investment returns have bolstered the system's assets. The stock market has been on a tear, rising about 200 percent between the bottom in early 2009 and the recent peak in September of this year. Although prices have retreated over the past few weeks, the trend for most of the last five years has been favorable. The Arizona State Retirement System generated an average yearly compounded return of 14.2 percent over the five years through June 2014, including a gain of 18.6 percent in the most recent year. Those returns are after expenses.

Matson said he expects investment performance to cool off, but he still predicts the fund will post returns averaging 8 percent a year over the long haul. With inflation low and more jobs being created, he considers the U.S. economy to be in fairly good shape. He also said he's not worried about the stock market's recent sell-off.

The fund currently has 66 percent of its assets invested in stocks and private equity, 24 percent in bonds and other debt instruments, and the rest mainly in commodities and real estate.

The Arizona State Retirement System is either 77 percent or 82 percent funded, depending on which of two main gauges are used to track its financial health. Either way, the pension system is below the 100 percent level that signifies a fully funded status, but the trend has been improving and the system is sustainable, Matson emphasized.
Public pension systems in general have suffered from a decline in funding status. The nation's 25 largest programs were just 76 percent funded on average in 2012, down from 91 percent in 2004, according to a recent report by Moody's Investors Service. The report didn't include the Arizona State Retirement System, but it, too, was 76 percent funded in 2012, using the more conservative method.
The Arizona pension system has made its long-term funding and other financial forecasts under a conservative assumption that the state, local governments, school systems and other public-sector employers don't add any new workers ahead. But if hiring does increase, that will further improve the system's finances by bringing in more workers who would pay the high current contribution rates that are helping to reduce the system's shortfall, Matson said.

Oklahoma pension systems show financial gains

OKLAHOMA CITY (AP) - Managers of Oklahoma's public retirement systems say the financial condition of the state's pension systems has improved.
Officials presented status reports on the conditions of the state's retirement systems to members of the House Economic Development and Financial Services Committee on Wednesday.

In 2010, the pension system's unfunded liability was more than $16 billion. But officials say the unfunded liability has dropped to $9.6 billion and - for the first time in a decade - is below $10 billion.

Overhauling Oklahoma's pension systems has been a top priority of the Republican-controlled Legislature. Lawmakers have worked to lower the unfunded liability - the amount owed to pensioners beyond what the systems can afford to pay. The funded ratio has improved from 58 percent four years ago to 74.4 percent.

Kentucky Teachers' Retirement sued for not addressing 'dire' funded status

By: Meaghan Kilroy
Published: November 11, 2014

A high school teacher in Louisville, Ky., filed a lawsuit against the Kentucky Teachers' Retirement System, charging the Frankfort-based system with failing to adequately address its "dire" funded status.

Randolph Wieck filed the class-action lawsuit in a Jefferson County Circuit Court on Monday on behalf of all participants in the $18.1 billion retirement system.

The lawsuit alleges the KTRS board of trustees failed in its fiduciary duty by not "aggressively and publicly demanding the full funding they need to stay solvent," by not informing members of the system's "dire funding status," and by not "aggressively exposing flawed and biased research in the Legislature's pension reform process."

Additionally, the lawsuit alleges KTRS has inappropriately invested in "high-risk alternative investments" such as hedge funds, along with firms that have been identified by the American Federation of Teachers as managers that "work against teacher funding nationwide." The lawsuit asks that KTRS "amend its investment guidelines to allow investments only appropriate for fiduciaries," invest with

managers that follow state ethics requirements and exclude managers on the American Federation of Teachers watchlist.

KTRS' funding ratio was 51.9% as of June 30, 2013, court documents show.
"(KTRS) is so poorly funded at the moment," said Mr. Wieck, in a telephone interview. "It doesn't seem that the Legislature is going to do anything, especially in (the 2015) session."

Over the last five years, KTRS has been "shorted" more than $1.8 billion in pension payments by the state Legislature, the lawsuit alleges.

The lawsuit demands KTRS communicate its "severe" underfunding to its participants, "demand full funding from the General Assembly in a public forum" and "initiate an aggressive lobbying campaign involving and informing all KTRS members."
The lawsuit also demands that if the Legislature does not provide full funding within a year, that KTRS "support publicly and financially legal action on behalf of its members against the General Assembly."

"We're very worried as a class (of teachers) … we're concerned this (retirement system) is going down the tubes," Mr. Wieck said.

Earlier this year, Mr. Wieck and a group of Louisville teachers considered filing a lawsuit against the state Legislature and Gov. Steve Beshear for not meeting its pension payments.

"That is an option and remains (an option)," Mr. Wieck said.

Beau Barnes, attorney and managing agent for KTRS, and Gary Harbin, executive secretary, said they have not been served with the lawsuit and could not comment.

IPERS' financial health improves, but fund still short

William Petroski, bpetrosk@dmreg.com *8:23 a.m. CST December 5, 2014*

Iowa's largest public employees' pension fund is $5.5 billion short of full funding, but the outlook is much brighter than a few years ago, when a consultant warned the system was headed for a financial "train wreck."

A report presented Thursday to the Iowa Public Employees' Retirement System, which has more than 340,000 members, showed the pension fund's assets have grown to $28 billion. IPERS is now 82.7 percent funded, up from 81 percent last year.

The report comes at a time when many public pension funds nationally are in trouble. A study in September by Moody's Investors Service said the nation's 25 largest public pension funds face $2 trillion in unfunded liabilities.

Iowa taxpayers are on the hook for IPERS' $5.5 billion in unfunded liabilities. But that's down from nearly $5.8 billion last year, reported actuaries for Cavanaugh MacDonald Consulting LLC. In contrast, the funded ratio for Illinois' largest public employees' pension fund, the Teachers Retirement System, is 44 percent, ranking it among the nation's worst-funded major retirement systems.

A good year in the financial markets provided IPERS an investment gain of 15.88 percent for the 12 months ending June 30.

Donna Mueller, IPERS' chief executive officer, said Thursday's report shows that for the first time in more than a decade, the Iowa pension fund's contributions by public employees and government employers equaled the expected actuarial contribution rates.
"Key measurements show IPERS is performing exactly as intended to provide secure lifetime retirement benefits for Iowa's public employees," Mueller said. She added that the pension fund's amortization period has been reduced from 27 years to 25 years.

IPERS' members include current, former and retired employees of state agencies, school districts, cities, counties and other Iowa government agencies. The average IPERS member retires after 22 years and receives an annual pension of $16,000.

Gretchen Tegeler, president of the Taxpayers Association of Central Iowa, said she agrees that IPERS is headed in the right direction. But she also said a defined benefit pension system with $5.5 billion in unfunded liabilities is not healthy.

"It is working its way back to financial health and will become healthy if all assumptions hold and we are comfortable with asking people who have not been born yet to help pay for work that was performed last year," Tegeler said.

Tegeler also said the average of $16,000 in annual IPERS payouts includes people who retired many years ago and some who didn't stay long. The average IPERS member with 30 to 34 years of service today earns $63,165 annually, she said. That person would receive about $37,899 in retirement, plus another $19,584 in Social Security benefits, for a total of more than $57,000, she said. Because the retirees will no longer be contributing to IPERS, nor Social Security or Medicare, their income as pensioners will be higher than when they were working, she said.

Patrice Beckham and Brent Banister, actuaries for Cavanaugh MacDonald's office in Bellevue, Neb., told the IPERS Investment Board on Thursday that compared to the universe of pension funds nationally, the Iowa retirement system's 82.7 percent funded ratio is respectable, although the goal is to be fully funded. Four years ago, Beckham had bluntly warned Iowa pension officials that they faced a financial train wreck if they failed to address IPERS' long-term funding crisis. The problems were so serious the pension system's unfunded liabilities were amortized into infinity. That prompted the Iowa Legislature in 2010 to increase pension contributions and revise the benefit structure, both of which appear to be working, officials said.

Lisa Stange, a retired corporate executive and investment professional who chairs the IPERS Investment Board, said after Thursday's presentation that the pension fund's outlook is improving in large part due to stock market gains.

"We are very fortunate. For the last four years we have had an up stock market, and that has helped some of our problems in the past. It doesn't cure it," Stange said. "We still need to keep working on our contribution rates, as well as the benefits that we offer our employees, to make sure that we are offering them what we can absolutely fund, and making sure that the plan is sound."
Some of the benefit revisions authorized by Iowa lawmakers in 2010 included raising the number of years worked before being vested in the plan from four to seven and basing pension payments on the five highest salary years instead of the three highest years. In addition, early retirees face a greater reduction in benefits.

The contribution rate by public employees and local government to the main IPERS pension fund totals 14.88 percent of an employee's earnings. Sixty percent of the contributions are funded by government employers and 40 percent by the employees.

Some Iowa politicians and business leaders — including Gov. Terry Branstad and the Greater Des Moines Partnership — say it's time to explore alternative retirement options that would be less costly for taxpayers.

The IPERS system is known as a defined benefit pension plan. Retirees get a monthly check of a guaranteed amount. Many private-sector workers are now covered only by defined contribution retirement plans, such as 401(k) plans. The employee decides on a salary contribution level and may receive a company match. Such plans are less risky for employers because they do not promise a specific benefit when a worker retires.

Brad Hudson, vice chairman of the IPERS Benefits Advisory Committee and a lobbyist for the Iowa State Education Association, said the Iowa pension system is turning around more quickly than expected. He said he is willing to review options for retirement programs, but he wants to know if public employees would receive the same level of benefits or if the same contribution would provide fewer benefits.
State Rep. Mary Mascher, D-Iowa City, a retired teacher who is a nonvoting member of the IPERS board, said the current pension system can work as long as its members are responsive to problems when the system isn't fully funded. Other states have had problems because they have refused to make changes like Iowa has done, she said.

Current pension system works better for all

MICHAEL FOX, SPECIAL TO LNP | Posted: Sunday, December 7, 2014 6:00 am

The National Institute on Retirement Security released a study reporting that a defined benefit pension can deliver the same retirement income at 46 percent lower cost than an individual, defined contribution, 401(k)-style.

The facts support that going from the current defined benefits plan to a 401(k)-style defined contribution plan would leave public employees unprepared for retirement. Also, the administrative costs to set up and operate two different systems would cost taxpayers billions, ironically, in an effort to save taxpayer money.

Defined contribution plans pad the wallets of Wall Street at the expense of employees, shifting the burden of retirement savings to them. Studies consistently show that workers are woefully unprepared for retirement.

Placing the entire burden of retirement security on loyal, long-term workers — often workers in dangerous, life-threatening public service jobs — is not the answer.

Contrary to what proponents say, the move to a defined contribution plan is not a budget lifesaver. The independent Public Employee Retirement Commission found that savings under Act 120 of 2010 are twice as much for public workers as plans that would place new employees in a defined contribution plan. It’s an effective move for all and should be given time to be fully implemented.

And finally, if the commonwealth adopts a defined contribution, 401(k)-style plan for new employees, there will no longer be a reoccurring investment into the pension fund. Retired public employees depend on our current pension. These same retirees haven't seen a cost-of-living adjustment in over 10 years, saving the commonwealth nearly $2 billion.

Public employees and retirees have continued to address pensions in the past and conceded with Act 120 and cost-of-living freezes. These concessions are working and have set the pension system back on track.

Moving to a 401(k)-style defined contribution plan does not make sense for Pennsylvania. We should be seeking ways to sustain economic security for current retirees, and guaranteeing the same security for future retirees instead of pushing them into a defined contribution plan that they are not ready for.

State employees' online retirement system hacked

MOSERS: Attempts to get money detected; no money was released

By Bob Watson

Friday, December 12, 2014

Missouri government retirees won't be able to access their information online until Tuesday morning — thanks to someone who managed to gain "unauthorized access" to four MOSERS members' home pages.

MOSERS — the Missouri State Employees Retirement System — sent about 81,000 emails, and another 20,000 letters, on Thursday to members, explaining the situation, which follows "four successful attempts beginning last month to fraudulently complete an online form for active members of MOSERS."

The information also has been posted on MOSERS website, www.mosers.org.

Candy Smith, the retirement system's communication and strategic planning coordinator, told the News Tribune the attempts to get money were detected, and no money was released.

In the online statement, MOSERS explained the four people whose accounts were hacked have been contacted and been given specific information about the effort.

"We are taking this matter very seriously, and we are working with state and federal law enforcement officials to identify and bring to justice the guilty party(ies)," the statement said.

Smith said: "We have been in direct contact with the FBI and the Missouri State Highway Patrol.

"The Highway Patrol contacted the Cole County Prosecuting Attorney's Office on our behalf."

Both Smith and the statement noted the access was made through individual members' home pages on the MOSERS site.

“In order to get in, they had to have the members’ Social Security numbers or MOSERS IDs, and their passwords,” Smith explained.

She said the officials don’t know how the hackers got that information.

Because of the unauthorized access, they’re making all MOSERS members create new passwords and security questions — but members can’t try to change their information until Tuesday, because the “Secure Member Login” has been blocked since 8 a.m. Thursday.

“Effective immediately, and out of an abundance of caution to avoid any potential data breaches, we are rescinding the online passwords and security questions for all MOSERS members,” the website statement reported.

After 8 a.m. Tuesday, the online statement said: “The next time you wish to log on it will be necessary for you to go through a process of setting up a new password and security question just as if you were a new member.

“To do so, you must go to www.mosers.org, click on ‘Register for a Password’ and follow the prompts.”

The online statement reminded MOSERS members that it always is a “good practice” to change passwords frequently, whether for MOSERS or “other sites that contain your personal information.”

The online statement also provides contact information for the three credit reporting agencies, as well as procedures to follow in getting a free credit report and notifying the credit agencies of any discrepancies found in those reports.

People who need information about their accounts before Tuesday — or who have information about other members’ records being compromised — will need to call MOSERS directly, either at 573-632-6100 in Jefferson City, or toll-free at 800-827-1063, or send an email at mosers@mosers.org.

Updates on the situation will be posted on the MOSERS

. State pension program faces challenges

By RONNIE ELLIS CNHI News Service | Posted: Tuesday, December 16, 2014 4:00 am

FRANKFORT – Kentucky’s financially troubled state employee retirement plan will be all right if — and it’s a big if — all goes according to plan.

That’s what KRS Executive Director Bill Thielen told the Public Pension Oversight Board on Monday, adding his assurance assumes no major financial disruption and the continued commitment of lawmakers to fully fund the required annual contribution.

The plan — the most troubled of the Kentucky Retirement System: the Kentucky Employees Retirement, County Employee Retirement and State Police Retirement systems — faces a $9.1 billion unfunded liability. (Overall, the four plans’ cumulative unfunded liability is closer to $17 billion.) The Kentucky Teachers Retirement System is separate, but faces its own fiscal challenges.

Two years ago, lawmakers passed a reform of KERS that places new state employees into a hybrid-cash balance plan, mandates fully funding the system based on actuarial recommendations and anticipates restoring KERS to financial stability over 20 years. (The change does not directly affect county, state police or teacher employees.)

But in the short term, things are likely to get worse. That unfunded liability is expected to increase to $9.7 billion during the next budget cycle. That's due to early retirements and an increase in annual benefit payments, which exceed projections and contributions by about $500 million.

But as more new employees are added to the hybrid plan in which a portion of their retirement is guaranteed but some is placed into a 401-K style account, those numbers will smooth out. And over time, the fund should come into relative balance.

"Our actuaries say if the plan meets assumptions (for investment income) and 100 percent of the (Actuarial Required Contribution from the legislature) continues, KERS non-hazardous will over time be okay," Thielen told the board.

"But the difficulty will be if we run into another 2009," he quickly added, referring the great recession and the declines in the stock market when the retirement system lost 17 percent of its investments.

Thielen later told a reporter that it won't require a "great" recession; even a routine recession could blow up the plan to restore the system to full viability.

That's why the board is finalizing a number of recommendations for both the retirement system and for lawmakers who will convene in January. One of the key recommendations to lawmakers is to "secure additional funding to avert any insolvency issues facing the Kentucky Employees Retirement System pension fund."

The recommendation, however, doesn't offer any suggestions on how to do that. The General Assembly and Gov. Steve Beshear have made reductions or adjustments in the state's General Fund more than 15 times since 2008, state revenues haven't entirely rebounded from the recession, and lawmakers have no appetite for raising taxes to generate more money. Increased funding of the pension systems must be made at the cost of other programs that also want more funding.

Another recommendation would further address the practice known as "spiking" in which employees use overtime or pay raises near retirement to boost their retirement benefits. Another calls for legislation to govern how a quasi-state agency can withdraw from the system. Seven Counties Services, a mental health agency serving the Louisville area, last year declared bankruptcy and sought the court's permission to leave the system.

But that leaves the question of whether a departing agency must be responsible for the retirement liabilities it has accrued on behalf of its employees. Presumably, the legislation would address that question.

Other recommendations from the board would bring the Kentucky Teachers' Retirement System under the board's review; urge KRS to engage an actuarial firm other than the one it uses to perform an audit of actuarial assumptions; and the board should better publicize its meetings, especially to employee and retiree groups.

New Issue Brief Analyzes Teacher Retirement Plan Choice in Two States

WASHINGTON--(BUSINESS WIRE)-- A new issue brief examines the retirement benefit elections of teachers in two states when new teachers have a choice between a defined (DB) pension plan or a plan that combines a defined contribution (DC) individual account with a DB pension. The analysis finds that since 2008, teachers in both states show a preference the stand-alone DB pension. The research also indicates that the financial security provided by DB pensions helps retain experienced teachers, leads to educational productivity and provides schools with an effective workforce management tool.

The research, *Teacher Retirement Plans: Case Studies in Washington and Ohio Indicate Value of Pensions*, is available here. A webinar is scheduled for Wednesday, December 17, 2014 at 4 PM ET to review the findings and respond to questions. Register here.
This new research brief from the National Institute on Retirement Security (NIRS) examines the experience in the only two states that have offered a DB-DC combination choice – Washington and Ohio – and includes three key findings:

1. The teacher retirement plan election pattern during 1997 in Washington is unique. The combined DB-DC plan offered by the state included special features and circumstances that enticed teachers to switch:

   -- Teachers were provided with an upfront financial payments in 1997 that encouraged the switch;

   -- Stock market conditions with double-digit gains in the 1980s and 1990s may have caused teachers to overestimate the future value of their DC accounts. Thus, the combined DB-DC plan appeared more attractive in 1997; and

   -- The state offered important features such as in-plan annuitization of a teacher's DC account balance, so he or she would receive guaranteed lifetime income with the state reassuming the

longevity risk. In fact, this ability provides teachers with a significantly larger lifetime income than available today from annuities from insurance companies.

2. Ohio had a far different outcome than Washington during the years when teachers could choose between the DB plan and the DB-DC combination plan. Between 2002-2014, 86% of new teachers opted to join the traditional DB plan and only four percent opted for the combined plan. The remaining 10% chose the DC plan, the third option available in Ohio.

3. Education policy research finds that DB pensions play a critical role in recruiting and retaining qualified, productive teachers. Thus, offering an alternative retirement plan design could have adverse effects on teacher retention and quality.

"This analysis serves as an informative tool for policymakers interested in education and retirement policy issues," said Diane Oakley, NIRS executive director. "The research makes it clear that teachers prefer DB pensions, and that the financial security provided by pension plays a critical role in recruiting and retaining talented educators. Moreover, a wide body of research finds that teacher retention is essential for delivering high quality education. Thus, policymakers should proceed with caution when considering any changes to teacher retirement plan design."

The research serves to clarify questions about teachers' retirement plan preferences. While teachers in Washington initially chose the DB-DC combination plan in high numbers, further analysis suggests that financial incentives and investment market conditions tilted decisions toward the DB-DC combination. Additionally, this new issue brief is consistent with two previous NIRS studies. One study found that employees overwhelming prefer DB pensions over plans with DC accounts, and the other study reported that pensions help improve education quality while reducing turnover costs.

Study of privatizing Kansas public pensions sought

By JOHN HANNA
AP Political Writer
Posted: Friday, Dec. 19, 2014

TOPEKA, Kan. Two top aides to Republican Gov. Sam Brownback proposed Friday that Kansas study privatizing the pension system for teachers and government workers.

Budget Director Shawn Sullivan and Secretary of Administration Jim Clark told a joint legislative committee on pensions that "reform options" for bolstering the public pension system's long-term health should be examined. Their list included converting pension benefits into annuities managed by a private insurer.

"It's an idea worth pursuing," Sullivan said after presenting the proposal to lawmakers.

The committee urged Brownback's aides to gather more information about private companies' experiences with such moves and present it once legislators open their next annual session Jan. 12. But members of both parties were skeptical.

Clark said with converting pension obligations into annuities, a private company assumes the long-term financial risks for a fee, while the state can provide competitive benefits at a lower cost.

Rep. Steve Johnson, an Assaria Republican, said the idea has merit, but, "I am not optimistic that there would be a buyer of that liability at a lower cost."

And Rebecca Proctor, interim executive director of the largest union for Kansas government employees, said private companies' need for profits would compete with the pension system's drive "to generate benefits for employees."

"Any time you put a profit motive in a state service, it's a problem," she said.

Kansas last year turned over administration of its Medicaid program for the poor and disabled to three private insurance companies. Assessments have been mixed, though Brownback argues the state has controlled costs while providing better health coverage.

The governor said last week that he is working on proposals for ensuring the long-term financial stability of the Kansas Public Employees Retirement System. His comments followed bipartisan criticism of his diversion of nearly $41 million in state funds from KPERS to general government programs to help close a projected $279 million shortfall in the current budget.

The pension system says benefits for retirees are only 60 percent funded through 2033, but a 2012 law mandated higher contributions to KPERS by both the state and workers so that the retirement system's obligations become fully funded by then. Critics contend the diversion of state funds represents backtracking, but Sullivan told the committee that the governor plans to do it only once even though the state also faces a shortfall in its budget for the fiscal year beginning in July.

Sullivan and Clark also proposed that the state study issuing up to $1.5 billion in bonds and putting the funds into KPERS to immediately boost the level of funding for its long-term obligations.

Also, they want additional study of proposals to move toward a 401(k)-style plan for new workers, an idea GOP conservatives have pushed in the past. The 2012 law included a plan for new employees that moved away from traditional benefits based on a worker's salary and years of service but wasn't a true 401(k)-style plan.

Critics of traditional public retirement plans argue that the state's liability is open-ended, with taxpayers on the hook. Retiree and public employee groups contend changes are designed to shift the financial risk to workers.

Saving Public Defined Benefit Plans

Talking Points

The funded status of public employee defined benefit (DB) retirement plans continues to garner great debate in the industry and press. DB plans are the primary vehicle for ensuring retirement income security for public workers, and Callan believes these plans are viable and necessary in this sector. In 2011, Callan published a report to initiate discussions around what went wrong in the past that left many of these plans woefully underfunded. We suggested ways to nurse them back to health by promoting DB plans and providing them with ongoing support. We revisit the topic in 2014, but now with a more urgent goal of saving public pensions amid persistent low funded levels and a burgeoning movement to disassemble them. The following talking points will help to move the discussion forward around the importance of DB plans. We expand on each point and support our assertions with research, data, and actuarial considerations.

1. **DB plans serve many purposes beyond providing constituents with retirement income.**
2. **DB plans are proven to be extremely cost effective and reliable in delivering basic retirement income security—when the rules of DB finance are followed.**
3. **Many public DB plans are underfunded today, but not because of paltry long-term returns. It is primarily because plan sponsors' contributions were neither sufficient nor consistent enough to properly fund the benefits promised.**
4. **New benefits cannot be funded out of better-than-average investment returns simply because average returns is all one can expect over the life of the plan.**
5. **DB plan funding surpluses and deficits occur as part of the normal cycle of investment market returns.**
6. **Plans that implement an actuarially sound funding policy will achieve 100% funded status over the long run. Over the short term, the plan could veer off course because of market cycles.**
7. **Healthy DB plans are underpinned by a sustainable benefit design, a strong governance process, and the sponsor's commitment to regularly fund the plan.**

1. DB plans serve many purposes beyond providing constituents with retirement income.

- Large DB plans are critical to well-functioning capital markets. By their sheer size, they can drive markets, command economies of scale, and also advance social and shareholder rights agendas. Through private investments, they are able to seed new companies and technologies.
- When retirees spend pension payments they support state and local economies. These amounts may be critical to sustaining small and rural communities.
- For state systems that opted out of Social Security, the DB plan is the only means for guaranteed lifetime income.
- Americans appear to support the idea of guaranteed lifetime income that DB plans provide. The public rejected former President Bush's suggestion to convert Social Security to a defined contribution-like system.
- There are other risk considerations for ensuring adequate retirement security. For example, avoiding growing demands on government programs like food stamps, Medicaid, and other high-cost social services.
- DB plans help to attract and retain valuable workers to public service by guaranteeing adequate retirement income security. Contrary to the belief that younger workers want more mobile benefits, a 2012 survey by Towers Watson showed that a vast majority of employees under the age of 40 now view traditional DB plans as very important.[1]
- Since DB plan benefits max out at retirement age, they offer an incentive to retire, thereby refreshing the workforce and advancing the careers of younger workers.

2. DB plans are proven to be extremely cost effective and reliable in delivering basic retirement income security—when the rules of DB finance are followed.

- Most individuals are neither savvy investors nor disciplined savers. In particular, low-income earners are most at risk when it comes to saving and investing on their own in a defined contribution (DC) plan.[2]

Actuary's Insight

Longevity and investment risk pose the largest threats to retirement income security.[3] DB plans are better able to manage both risks. DB plans have a large pool of participants that spread longevity risk, while individuals in a DC plan cannot guarantee that they will not outlive their savings.[4] Similarly, DB plans have more diversified portfolios, better access to professional investment management, and greater power to negotiate fees, mitigating investment risk.

DB plan sponsors guarantee the pension liability and thus keep a long-term investment horizon, even when a significant number of employees retire. Individuals have shorter investment horizons, and will often reduce the investment risk in their portfolio as retirement approaches.

- The Callan DC Index™ reveals DB plans have outperformed DC plans by an annualized 78 basis points since 2006.[5] DB plans benefit from having more diversified and illiquid asset classes, such as private real estate, private equity, and hedge funds. DC participants have demonstrated behavior that has negatively impacted returns, like buying lower-returning strategies, investing in company stock rather than a diversified equity portfolio, and trying to time the market.
- Individual investors in the average DC plan tend to pay significantly higher annual fees than DB plans due to differences between retail and institutional pricing.
  - *A Pension Benefit Study estimated that annual expenses for individual investors are 89 bps compared to 47 bps paid by one public plan.*[6]
  - *As a result of lower fees and higher returns, for the same level of lifetime income, a DB plan costs 46 cents for every one dollar contributed to a DC plan.*[7]
- DC plans are now the primary retirement vehicle for much of the private sector. The most effective DC plans take on DB plan characteristics through automatic enrollment, appropriate default options (institutional-quality target date funds), and automatic contribution escalation features. Many employers do not adopt these features because of cost and competitive considerations. Consequently, the worker must manage income replacement at retirement, and may ultimately need to receive government support.
- Hybrid pension plans—which combine the features and characteristics of DB and DC plans—can meet the needs of all stakeholders through the sharing of longevity and investment risks by both employers and workers.

Key Lessons from Today's Well-Funded Public Pension Plans

1. Employers made their full annual required contributions.
2. Employees paid their share of contributions.
3. Benefit improvements were properly funded when adopted, and cost-of-living adjustments were made responsibly.
4. Anti-spiking measures were adopted on final benefit calculations.
5. Employers used "reasonable" actuarial assumptions for the discount and inflation rates in determining fund valuations.

Source: National Institute on Retirement Security. "Lessons from Well-Funded Public Pensions: An Analysis of Six Plans that Weathered the Financial Storm." 2011.

3. **Many public DB plans are underfunded today, but not because of paltry long-term returns. It is primarily because plan sponsors' contributions were neither sufficient nor consistent enough to properly fund the benefits promised.**
   - The vast majority of public pension plans achieved their assumed annual investment returns. According to Callan's Public Fund Database, even the worst-performing funds (90th percentile) earned an annualized 9.17% over 30 years ended June 30, 2014 (**Exhibit 1**). However, returns over 10 and 20 years are considerably lower. Bond yields today (driving future bond returns) are at lows last seen in the 1950s and 1960s. Thus, excess returns cannot be counted on to reduce today's underfunding.

Actuary's Insight

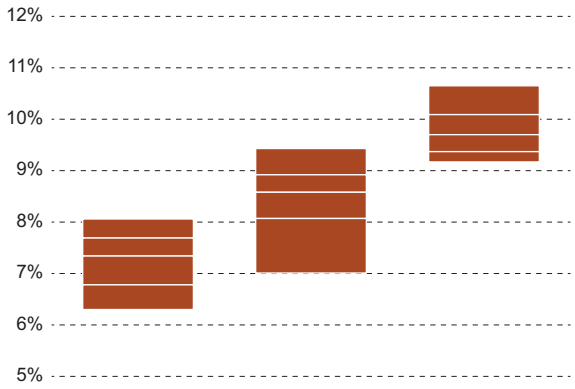
Annual contributions are always required to fund normal costs and to support the accrued liabilities when the plan is underfunded. Plan sponsors need to fund the actuarial recommended contribution each year, which fairly represents the required annual contribution. Regular contributions benefit from the compounding of investment returns.

- In the DB model, new benefits are paid for with new cash contributions each year. These contributions must be invested in a fund that is structured to produce the assumed investment return over time.
- Fully funding pension benefits over the period of employment ensures intergenerational equity, which aligns the costs of today's services with their beneficiaries.
- Trustees and stakeholders have two ways to reduce today's underfunding: decrease liabilities or increase assets through contributions. Most DB plans need a combination of both to regain their health.

Exhibit 1

Callan Fund Sponsor Database Geometric Returns

Periods Ended June 30, 2014



	Last 10 Years	Last 20 Years	Last 30 Years
10th Percentile	8.01	9.43	10.65
25th Percentile	7.64	8.92	10.09
Median	**7.29**	**8.58**	**9.70**
75th Percentile	6.73	8.07	9.37
90th Percentile	6.25	7.01	9.17
Member Count	174	98	28

Source: Callan

4. **New benefits cannot be funded out of better-than-average investment returns simply because average returns is all one can expect over the life of the plan.**
   - In the long term, periods of outperformance are balanced by periods of underperformance, which eventually causes returns to revert to the long-term average.

Actuary's Insight

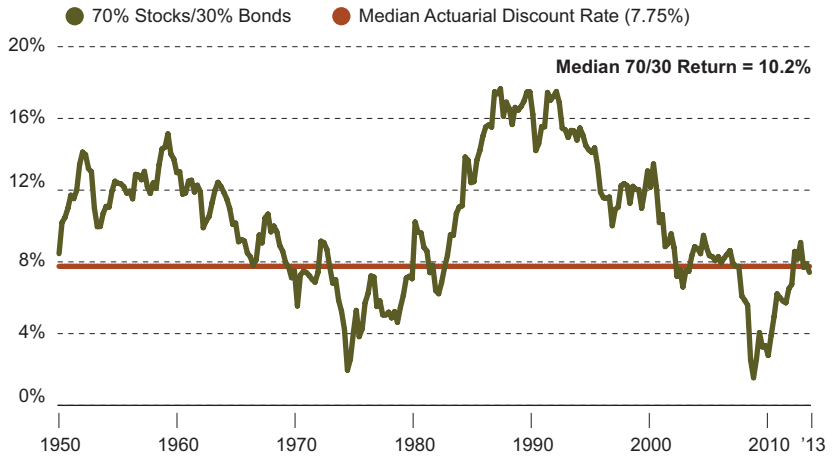
Assumed future investment returns are already included in actuarial funding calculations. The median actuarial discount rate in 2013 was 7.75%, slightly below the median rate of 8% used from 2001-2011.[8]

Future projections of investment return assumptions should only be based on each plan's capital market expectations for its adopted asset allocation strategy.

- The investment return assumption (or actuarial discount rate) is a projected long-term average or median of a wide range of very good, mediocre, and very bad investment returns, which can occur in any given year and over longer periods. **Exhibit 2** compares returns for a diversified portfolio of stocks (70% global equity) and bonds (30% U.S. fixed income)—typical of a public DB plan—to a long-term median actuarial discount rate of 7.75%. We note substantial long-term volatility; while the median 10-year geometric return over the entire period was 10.2%, more recent periods show underperformance.

Exhibit 2

Rolling 10-Year Nominal Returns for 70% Global Equity/30% U.S. Bond Portfolio



Note: The asset allocation in Exhibit 2 is 41% U.S. equity, 29% non-U.S. equity, and 30% U.S. fixed income from 1970 to 2013. Prior to 1970, it is 70% U.S. equity and 30% U.S. fixed income. The benchmark for U.S. equity is the Russell 3000 Index after 1979; before 1979 the benchmark is a blend of 90% Ibbotson S&P 500 and 10% Ibbotson Small Company. For non-U.S. equity, the benchmark is MSCI EAFE from 1970 to 1988, and MSCI ACWI ex-USA thereafter. For U.S. fixed income, the Barclays Aggregate is the benchmark for periods after 1976; prior to 1976, it is a blend of 70% Ibbotson Intermediate Government and 30% Long Term Corporates. Measured over rolling 10-year periods from first quarter 1950 to fourth quarter 2013.
Source: Callan

5. **DB plan funding surpluses and deficits occur as part of the normal cycle of investment market returns.**
   - As Exhibit 2 reveals, funding higher benefits out of a surplus is an irrational practice, as surpluses are a temporary product of market cycles. A pension surplus from better-than-average investment returns will turn into a deficit when returns fall below average. There is no such thing as an enduring surplus, unless the plan has been systematically overfunded.
   - There are such things as real deficits, and they are invariably much deeper and more persistent than any surplus when the benefits have been systematically underfunded.

6. **Plans that implement an actuarially sound funding policy will achieve 100% funded status over the long run. Over the short term, the plan could veer off course because of market cycles.**
   - Far too many DB pension plans only approach 100% funding at market peaks. Sponsors need to have the discipline to allow for excess funding during good times without giving away surpluses to benefit increases.
   - Surpluses will naturally become deficits at market bottoms. Funds need a positive surplus reserve in good times to prepare for bad times.
   - The recommendations of the Blue Ribbon Panel on Public Pension Plan Funding (2014)[9] define three principles for an actuarially sound funding policy: adequacy, intergenerational equity, and cost stability/predictability. The task force concluded that adequacy (striving to fund 100% of the obligations over a broad range of future economic outcomes, both good and bad) and intergenerational equity should take precedent over the goal of cost stability and predictability, particularly when a significant portion of the investments are allocated to higher-risk and more volatile assets.

7. **Healthy DB plans are underpinned by a sustainable benefit design, a strong governance process, and the sponsor's commitment to regularly fund the plan.**
   - Characteristics of good governance include ensuring that recommended contributions are paid, ensuring trustees have sufficient training and information to analyze risk, and being deliberate when making plan changes.

Actuary's Insight

Good returns only have an impact on the health of DB plans if all of the money to fund the promised benefits is invested to take advantage of the compounding of investment returns.

What is often overlooked is that the actuarial liability for benefits granted will compound just like investment returns. This compounding effect is magnified as the plan matures. Without contributions compounding at a similar rate alongside liabilities, deficits will accelerate.

Conclusions

- Trustees and stakeholders can correct the mistakes of the past by going back to the basics: Create discipline through good governance and always make the necessary contributions to fund reasonable benefits over time. Adherence to these principles and new contributions in a positive investment market cycle has improved funding for most public DB plans over the last three years.
- Investment returns should not be counted on to reduce today's underfunding over the long term. A combination of reducing the present value of the liabilities and increasing assets through contributions will be needed.
- Plans should adopt a reasonable investment return assumption for the future based on the long-term capital market expectations for their unique asset allocation strategy.
- The long-term management objective should be to make the return that is needed for adequate long-term benefit, contribution, and funding policy with the least risk of not making it. Funds that increase investment risk in an attempt to "play catch up" run a grave risk of failure.
- DB plans are both cost effective and efficient in producing the safety net for retirement income security. DC plans can also play an important role in achieving this goal, but they transfer all of the risks from employers to workers. Risk sharing avoids the potential long-term real and social costs of insufficient income replacement for retirees.
- Callan believes that DB plans in the public sector are viable and necessary. Government bodies can achieve almost any financial goal given a disciplined strategy and enough time, something that all public pension fund sponsors have. All sponsors need to do is simply follow the rules of DB finance!

Notes

1 Towers Watson 2012 Global Workforce Study. "Engagement at Risk: Driving Strong Performance in a Volatile Global Environment." http://www.towerswatson.com/assets/pdf/2012-Towers-Watson-Global-Workforce-Study.pdf

2 Barbara Burtica, Howard Iams, Karen Smith, and Eric Toder, "The Disappearing Defined Benefit Pension and Its Potential Impact on the Retirement Incomes of Baby Boomers." 2009.

3 Longevity risk describes the risk of outliving one's savings. Longevity risk is very high for an individual because we know that 50% of the population will live past life expectancy (i.e., 50% of all participants in DC plans will therefore need to over save). Investment risk describes the risk that the portfolio's investment returns do not meet the expected return targets.

4 DC participants do have the option to annuitize their savings, effectively transferring longevity and investment risk to an insurance company. The current environment of very low interest rates reveals that most do not select this option, as the annuity price is driven by the level of interest rates at the time of purchase (i.e., timing risk associated with the annuity purchase).

5 Callan's DC Index results, first quarter 2014. Available at http://www.callan.com/research/dcindex/

6 Pension Benefit Design Study. Teacher Retirement System of Texas. Gabriel, Roeder, Smith & Company (GRS). September 1, 2012. http://www.trs.state.tx.us/about/documents/pension_study_benefit_design.pdf

7 Ilana Boivie. Issue Brief, "Who Killed the Private Sector DB Plan?" National Institute on Retirement Security. March 2011.

8 NASRA Public Fund Survey. December 2013. http://www.nasra.org/files/Issue%20Briefs/NASRAInvReturnAssumptBrief.pdf

9 Report of the Blue Ribbon Panel on Public Pension Funding. An Independent Panel Commissioned by the Society of Actuaries. February 2014. https://www.soa.org/brpreport364

Authors

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Prior to joining Callan in 1974, in addition to other financial responsibilities, Ron worked with Marathon Oil Company's pension investments while serving as an officer in the U.S. Army Reserve. Ron earned an M.B.A. degree in Finance and a B.S. degree in Accounting at Indiana University.

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Prior to joining the firm, she spent eight years as a consultant with Watson Wyatt Worldwide, an employee benefits consulting firm. Her duties included consulting to plan sponsor clients on pension plan design, funding, accounting, regulatory, and investment issues. She also spent four years in Jakarta assisting the Indonesian government to develop and implement a private employer pension law.

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NASRA Issue Brief:
Public Pension Plan Investment Return Assumptions

Updated October 2014

As of June 30, 2014, state and local government retirement systems held assets of $3.70 trillion.[1] These assets are held in trust and invested to pre-fund the cost of pension benefits. The investment return on these assets matters, as investment earnings account for a majority of public pension financing. A shortfall in long-term expected investment earnings must be made up by higher contributions or reduced benefits.

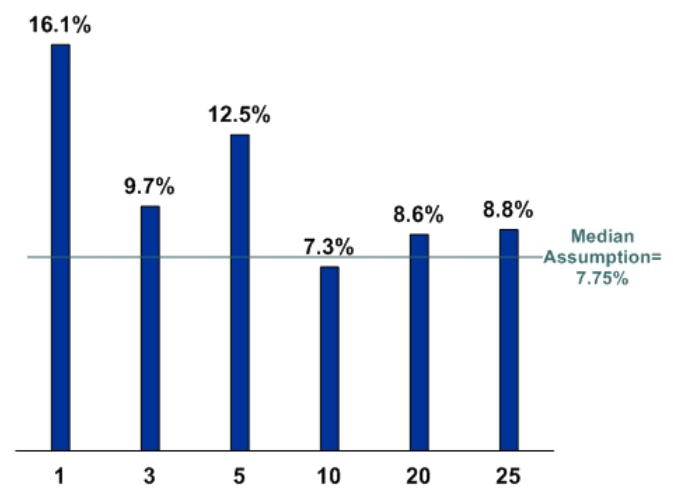
Funding a pension benefit requires the use of projections, known as actuarial assumptions, about future events. Actuarial assumptions fall into one of two broad categories: demographic and economic. Demographic assumptions are those pertaining to a pension plan's membership, such as changes in the number of working and retired plan participants; when participants will retire, and how long they'll live after they retire. Economic assumptions pertain to such factors as the rate of wage growth and the future expected investment return on the fund's assets.

As with other actuarial assumptions, projecting public pension fund investment returns requires a focus on the long-term. This brief discusses how investment return assumptions are established and evaluated and compares these assumptions with public funds' actual investment experience.

Public pension fund investment return assumptions have been the focus of growing attention in recent years. Some critics of current public pension investment return assumption levels say that current low interest rates and volatile investment markets require public pension funds to take on too much investment risk to achieve their assumption. Because investment earnings account for a majority of revenue for a typical public pension fund, the accuracy of the assumption has a major effect on the plan's finances and actuarial funding level.

An investment return assumption that is set too low will overstate liabilities and costs, causing current taxpayers to be overcharged and future taxpayers to be undercharged. A rate set too high will understate liabilities, undercharging current taxpayers, at the expense of future taxpayers. An assumption that is significantly wrong in either direction will cause a misallocation of resources and unfairly distribute costs among generations of taxpayers.

Figure 1: Median public pension annualized investment returns for period ended 6/30/2014



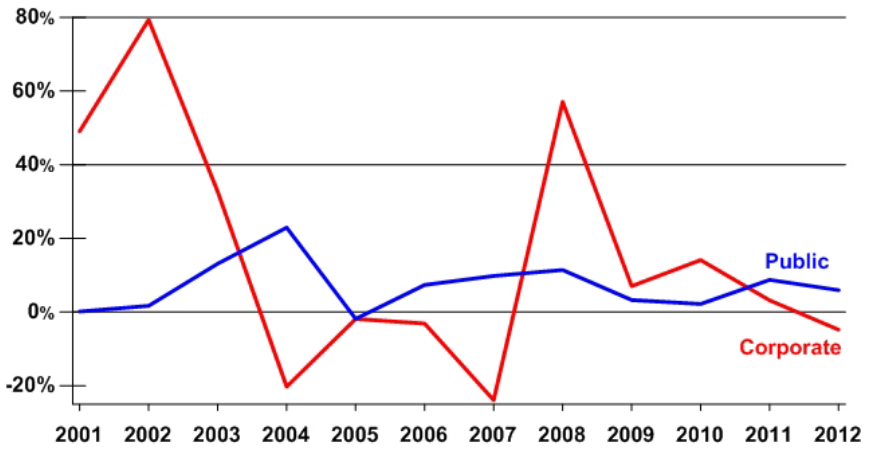
Source: Callan Associates

Although public pension funds, like other investors, experienced sub-par returns in the wake of the 2008-09 decline in global equity values, median public pension fund returns over longer periods meet or exceed the assumed rates used by most plans. As shown in Figure 1, at 8.8 percent, the median annualized investment return for the 25-year period ended June 30, 2014, exceeds the median assumption of 7.75 percent (see Figure 4), while the 10-year return is below this level.

[1] Federal Reserve, *Flow of Funds Accounts of the United States: Flows and Outstandings, Second Quarter 2014*, Table L.118

Public retirement systems typically follow guidelines set forth by the Actuarial Standards Board to set and review their actuarial assumptions, including the expected rate of investment return. Most systems review their actuarial assumptions regularly, pursuant to state or local statute or system policy. Actuarial Standards of Practice No. 27 (Selection of Economic Assumptions for Measuring Pension Obligations) (ASOP 27) prescribes the considerations actuaries should make in setting an investment return assumption. As described in ASOP 27, the process for establishing and reviewing the investment return assumption involves consideration of various financial, economic, and market factors, and is based on a very long-term view, typically 30 to 50 years. A primary objective for using a long-term approach in setting public pensions' return assumption is to promote stability and predictability of cost to ensure intergenerational equity among taxpayers.

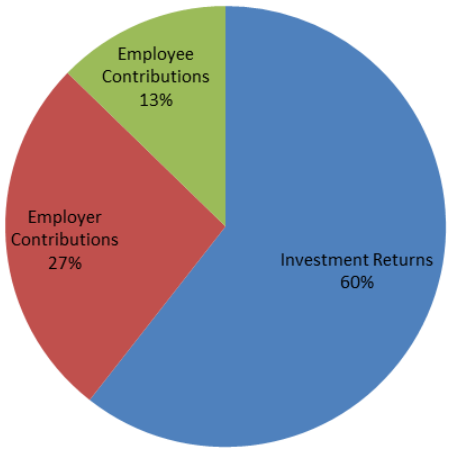
Figure 2: Annual change in contributions from prior year in pension contributions, corporate vs. public



Source: Compiled by NASRA based on U.S. Department of Labor and U.S. Census Bureau data

Unlike public pension plans, corporate plans are required by federal regulations to make contributions on the basis of current interest rates. As Figure 2 shows, this method results in plan costs that are volatile and uncertain, often changing dramatically from one year to the next. This volatility is due in part to fluctuations in interest rates and has been identified as a leading factor in the decision among corporations to abandon their pension plans. By focusing on the long-term and relying on a stable investment return assumption, public plans experience less volatility of costs.

Figure 3: Public Pension Sources of Revenue, 1983-2012



Source: Compiled by NASRA based on U.S. Census Bureau data

As Figure 3 shows, since 1983, public pension funds have accrued an estimated $5.3 trillion in revenue, of which $3.2 trillion, or 60 percent, is estimated to have come from investment earnings. Employer contributions account for $1.4 trillion, or 27 percent of the total, and employee contributions total $662 billion, or 13 percent.[i]

Public retirement systems operate over long timeframes and manage assets for participants whose involvement with the plan can last more than half a century. Consider the case of a newly-hired public school teacher who is 25 years old. If this pension plan participant elects to make a career out of teaching school, he or she may work for 35 years, to age 60, and live another 25 years, to age 85. This teacher's pension plan will receive contributions for the first 35 years and then pay out benefits for another 25 years.

During the entire 60-year period, the plan is investing assets on behalf of this participant. To emphasize the long-term nature of the investment return assumption, for a typical career employee, more than one-half of the investment income earned on assets accumulated to pay benefits is received *after* the employee retires.

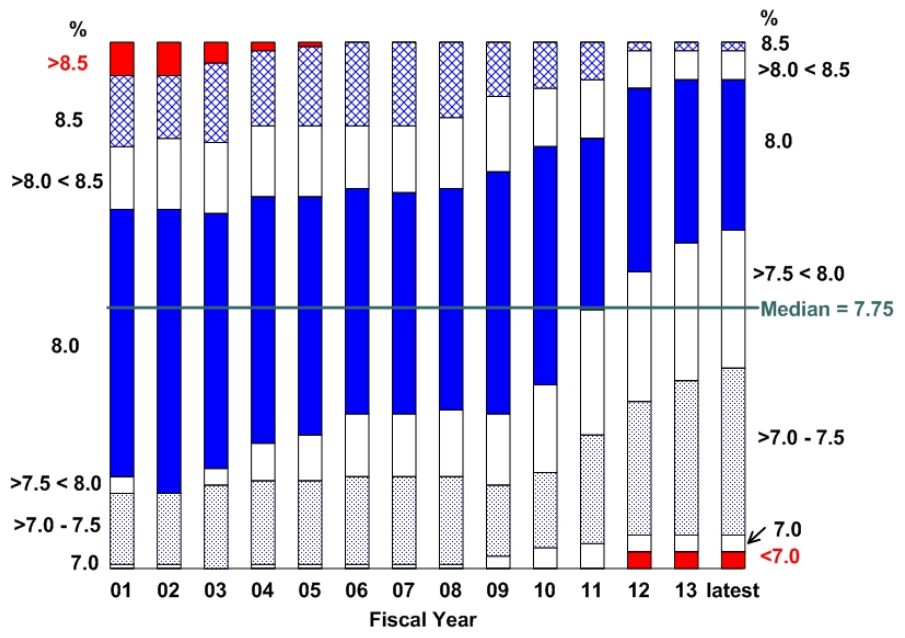
The investment return assumption is established through a process that considers factors such as economic and financial criteria; the plan's liabilities; and the plan's asset allocation, which reflects the plan's capital market assumptions, risk tolerance, and projected cash flows. Investment return assumptions for most public plans are composed of two components: the real return, and the rate of inflation. The sum of these figures equals the plan's

nominal investment return assumption, and most public pension plans regularly appraise each component of the nominal return pursuant to the aforementioned process.

Standards for setting an investment return assumption, established and maintained by professional actuaries, recommend that actuaries consider a range of specified factors, including current and projected interest rates and rates of inflation; historic and projected returns for individual asset classes; and historic returns of the fund itself. The investment return assumption reflects a value within the projected range.

As shown in Figure 4, many public pension plans have reduced their return assumption in recent years. Among the 126 plans measured in the Public Fund Survey, more than one-half have reduced their investment return assumption since fiscal year 2008. The median return assumption is 7.75 percent. Appendix A details the assumptions in use or adopted by the 126 plans in the Public Fund Survey.

Figure 4: Change in distribution of public pension investment return assumptions, FY 01 through October 2014

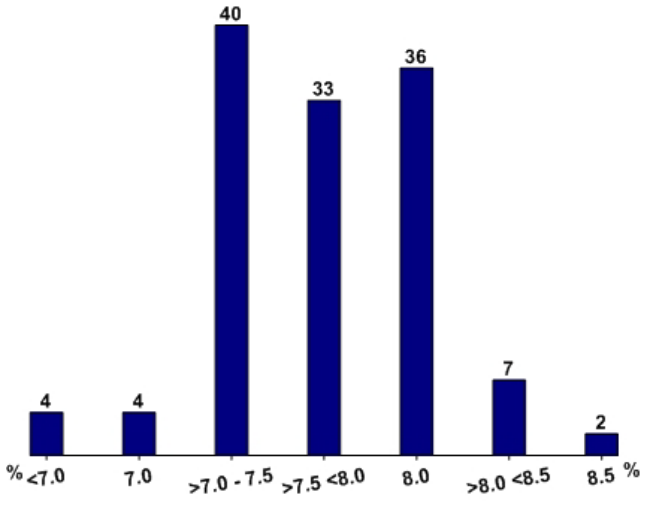


Source: Compiled by NASRA based on Public Fund Survey, Oct. 2014

Conclusion

Over the last 25 years, a period that has included three economic recessions and four years when median public pension fund investment returns were negative, public pension funds have exceeded their assumed rates of investment return. Changes in economic and financial conditions are causing many public plans to reconsider their investment return assumption. Such a consideration must include a range of financial and economic factors while remaining consistent with the long timeframe under which plans operate.

Figure 5: Distribution of investment return assumptions



Source: Compiled by NASRA based on Public Fund Survey, Oct. 2014

See Also:

- Actuarial Standards of Practice No. 27, Actuarial Standards Board
- The Liability Side of the Pension Equation, Missouri SERS, February 2012
- The Public Fund Survey is sponsored by the National Association of State Retirement Administrators and the National Council on Teacher Retirement (registration required)

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Appendix A: Investment Return Assumption by Plan

(Figures reflect the nominal assumption in use, or announced for use, as of October 2014)

Plan	Rate (%)
Alabama ERS	8.00
Alabama Teachers	8.00
Alaska PERS	8.00
Alaska Teachers	8.00
Arizona Public Safety Personnel	7.85
Arizona SRS	8.00
Arkansas PERS	8.00
Arkansas Teachers	8.00
California PERF	7.50
California Teachers	7.50
Chicago Teachers	8.00
City of Austin ERS	7.75
Colorado Affiliated Local	7.50
Colorado Fire & Police Statewide	7.50
Colorado Municipal	7.50
Colorado School	7.50
Colorado State	7.50
Connecticut SERS	8.00
Connecticut Teachers	8.50
Contra Costa County	7.25
DC Police & Fire	6.50
DC Teachers	6.50
Delaware State Employees	7.50
Denver Employees	8.00
Denver Public Schools	7.50
Duluth Teachers[2]	8.40
Fairfax County Schools	7.50
Florida RS	7.65
Georgia ERS	7.50
Georgia Teachers	7.50
Hawaii ERS	7.75
Houston Firefighters	8.50
Idaho PERS	7.00
Illinois Municipal	7.50
Illinois SERS	7.25
Illinois Teachers	7.50
Illinois Universities	7.25
Indiana PERF	6.75
Indiana Teachers	6.75
Iowa PERS	7.50
Kansas PERS	8.00
Kentucky County	7.50
Kentucky ERS	7.50
Kentucky Teachers	7.50
LA County ERS	7.50
Louisiana SERS[1]	7.75
Louisiana Teachers[1]	7.75
Maine Local	7.125
Maine State and Teacher	7.125
Maryland PERS[2]	7.65
Maryland Teachers[2]	7.65
Massachusetts SERS	8.00
Massachusetts Teachers	8.00
Michigan Municipal	8.00
Michigan Public Schools	8.00
Michigan SERS	8.00
Minnesota PERF[3]	8.40
Minnesota State Employees[3]	8.40
Minnesota Teachers[3]	8.40
Mississippi PERS	8.00
Missouri DOT and Highway Patrol	7.75
Missouri Local	7.25
Missouri PEERS	8.00
Missouri State Employees	8.00
Missouri Teachers	8.00
Montana PERS	7.75
Montana Teachers	7.75
Nebraska Schools	8.00
Nevada Police Officer and Firefighter	8.00
Nevada Regular Employees	8.00
New Hampshire Retirement System	7.75
New Jersey PERS	7.90
New Jersey Police & Fire	7.90
New Jersey Teachers	7.90
New Mexico PERA	7.75
New Mexico Teachers	7.75
New York City ERS	7.00
New York City Teachers	8.00
New York State Teachers	8.00

North Carolina Local Government	7.25
NC Teachers and State Employees	7.25
North Dakota PERS	8.00
North Dakota Teachers	8.00
NY State & Local ERS	7.50
NY State & Local Police & Fire	7.50
Ohio PERS	8.00
Ohio Police & Fire	8.25
Ohio School Employees	7.75
Ohio Teachers	7.75
Oklahoma PERS	7.50
Oklahoma Teachers	8.00
Oregon PERS	7.75
Pennsylvania School Employees	7.50
Pennsylvania State ERS	7.50
Phoenix ERS	8.00
Rhode Island ERS	7.50
Rhode Island Municipal	7.50
San Diego County	8.00
San Francisco City & County	7.58
South Carolina Police	7.50
South Carolina RS	7.50
South Dakota PERS[4]	7.25
St. Louis School Employees	8.00

St. Paul Teachers[3]	8.40
Texas County & District	8.00
Texas ERS	8.00
Texas LECOS	8.00
Texas Municipal	7.00
Texas Teachers	8.00
TN Political Subdivisions	7.50
TN State and Teachers	7.50
Utah Noncontributory	7.50
Vermont State Employees[5]	8.10
Vermont Teachers[4]	7.90
Virginia Retirement System	7.00
Washington LEOFF Plan 1[6]	7.90
Washington LEOFF Plan 2	7.50
Washington PERS 1[6]	7.90
Washington PERS 2/3[6]	7.90
Washington School Employees Plan 2/3[6]	7.90
Washington Teachers Plan 1[6]	7.90
Washington Teachers Plan 2/3[6]	7.90
West Virginia PERS	7.50
West Virginia Teachers	7.50
Wisconsin Retirement System	7.20
Wyoming Public Employees	7.75

1. This rate for the Louisiana plans, scheduled to be effective for their 7/1/14 actuarial valuations, is contingent on legislative approval scheduled in November 2014
2. The Maryland State Retirement Agency Board of Trustees began, with the actuarial valuation dated 6/30/13, a phased reduction in the assumption used for its PERS and Teachers plans from 7.75 percent, by .05% each year until the rate reaches 7.55.
3. The Minnesota Legislature, which sets in statute investment return assumptions used by public plans in the state, established in 2012 the use of "select-and-ultimate" rates for investment return assumptions. These plans are using an assumed rate of 8.0 percent for five years, through FY 16, after the assumption will return to 8.5 percent. The rate shown here for the Minnesota plans is the effective rate in use for FY 14. This rate will rise gradually until reaching 8.50 percent in FY 17. For more information on select-and-ultimate rates, please see Actuarial Standards of Practice No. 27: http://www.actuarialstandardsboard.org/pdf/asops/asop027_172.pdf.
4. The SDRS set the rate at 7.25% through FY 2018, after which it will rise to 7.50%.
5. The Vermont retirement systems adopted "select-and-ultimate" rates in 2011; the rates shown reflect the single rates most closely associated with the funding results for the respective plans, based on their projected cash flows.
6. For all Washington State plans except LEOFF Plan 2, the assumed rate of return will be reduced to 7.8% on July 1, 2015, and to 7.7% on July 1, 2017.

[i] US Census Bureau, Annual Survey of Public Pensions, State & Local Data

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Still a Better Bang for the Buck

An Update on the Economic Efficiencies of Defined Benefit Pensions

by William B. Fornia, FSA, and Nari Rhee, PhD

December 2014

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EXECUTIVE SUMMARY

Over the past three decades, private employers have shifted away from defined benefit (DB) pensions that provide employees with a steady retirement income stream, towards defined contribution (DC) retirement accounts—such as 401(k) plans—in which individual workers manage their own investments. Since the 2008 financial crisis, public employers have faced pressures to make a similar change.

However, DB plans are inherently more cost-efficient than DC plans. A seminal NIRS study released in 2008, entitled "A Better Bang for the Buck," found that a typical large DB pension plan provides a given level of retirement benefit at about half the cost of a DC plan. In this updated comparison of DB and DC plan costs, we take into account key developments in the retirement benefits landscape with regard to fees, investment strategies, and annuities, while building an "apples to apples" comparison through a uniform set of demographic and economic assumptions. Highlights include the following:

1. A typical DB plan provides equivalent retirement benefits at about half the cost of a DC plan, and 29 percent lower cost than an "ideal" DC plan modeled with generous assumptions.

- A DB plan, modeled with the typical fees and asset allocation of a large public plan, has a 48 percent cost advantage compared to a typical individually directed DC plan.

- The DB pension costs 29 percent less than an "ideal" DC plan that features the same low fees and no individual investor deficiencies.

- Annuitizing DC account balances does not erase the DB pension cost advantage. Annuities offered by private insurance companies would only modestly decrease DC funding requirements at historical average interest rates, and would increase costs at 2014 interest rates.

2. DB plans have three structural cost advantages compared to DC plans: longevity risk pooling, the ability to maintain a well-diversified portfolio over a long investment horizon, and low fees and professional management.

- **Longevity risk pooling.** In order to provide lifelong income to each and every retiree. DB plans only have to fund benefits to last to average life expectancy. In a DC plan, an individual must accumulate extra funds in order to self-insure against the possibility of living longer than average. They can also buy a life annuity from an insurance company, but this comes at a cost.

- **Asset allocation.** DB pensions are able to maintain portfolio diversification—specifically, stay invested in equities—over time, while DC participants must shift to lower-risk, lower-return investments as they age. Thus over a lifetime, DB pensions earn higher gross investment returns than do DC accounts.

- **Low fees and professional management.** Due to economies of scale, DB plans feature low investment and administrative expenses as well as management of investments by professionals. An "ideal" DC plan can theoretically achieve the same fees and investment returns, for a given asset allocation, by removing individual choice. When we use more realistic assumptions—industry average fees and a modest "behavioral drag" on investment returns resulting from well-documented tendencies in individual investor behavior—we find that the DB plan has a large advantage in net investment returns.

3. Given the cost efficiencies inherent to DB plans, employers and policymakers should continue to carefully evaluate claims that "DC plans will save money."

- For a given level of retirement income, a typical individually directed DC plan costs 91 percent more—almost twice as much—as a typical DB plan.

- Consequently, shifting from a DB plan to a DC plan and maintaining the same contribution rate will generate significant cuts in retirement income. The consequences could be dramatic for employees, employers, and taxpayers.

I. INTRODUCTION

Over the past three decades, private employers have shifted away from defined benefit (DB) pensions that provide employees with a steady retirement income stream, towards defined contribution (DC) retirement accounts—such as 401(k) plans—in which individual workers manage their own investments. By and large, public employers have faced growing pressure since the 2008 financial crisis to make a similar change. Contrary to popular belief, however, DC retirement accounts are not inherently less costly than a pension, and switching from a DB to a DC system saves money only if it involves substantial benefit cuts.

In fact, DB pensions feature critical efficiencies that make them significantly less expensive to provide a given level of retirement benefit compared to DC plans. This was documented by the National Institute on Retirement Security (NIRS) in its 2008 study, "A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pensions."[1] The study found that a typical large DB pension plan provides a given level of retirement benefit at about half the cost of a 401(k) style plan, because of three factors:

- The pooling of longevity risk in DB pensions enables them to fund benefits based on average life expectancy, and yet pay each worker monthly income no matter how long they live. In contrast, DC plans must receive excess contributions to enable each worker to self-insure against the possibility of living longer than average.

- DB pensions realize higher net investment returns due to professional management and lower fees from economies of scale.

- DB pensions are able to maintain portfolio diversification over time, while DC participants must shift to lower-risk, lower-return investments as they age. This means that over a lifetime, DB pensions earn higher gross investment returns than do DC accounts.

In summary, when it comes to providing retirement income, DB pensions are more efficient because they pool risks across a large number of individuals, invest over a longer time horizon, and have lower expenses and higher returns.

While these facts have not fundamentally changed since 2008, this study updates the comparison of retirement benefit funding costs based on an enhanced methodology that takes into account key changes in the DB and DC plan landscapes with regard to investment strategies and fees. We compare a typical large public sector DB pension to two kinds of DC plans—an individually directed DC plan with industry average fees and reduced investment returns based on typical investor behavior, and an "ideal" DC plan with fees well below industry average and asset class investment performance as strong as that achieved by professionals. Both DC plans are modeled with a target date fund (TDF) asset allocation pattern.

...a typical DB plan provides equivalent retirement benefits at about half the cost of a typical DC plan, and 29 percent lower cost than an ideal DC plan...

All three plans—the typical DB plan, the individually directed DC plan, and the ideal DC plan—are modeled with the same underlying demographic and economic assumptions regarding employee wage growth, retirement age, life expectancy, target monthly retirement income, inflation, and projected rates of return for each asset class. We also assume that all plans receive consistent, adequate contributions required to fund target benefits. In addition, we study the cost impact of annuitizing the account balances in the DC plans.

Even with updated assumptions and methodology, we still find that DB pensions offer substantial cost advantage over DC plans.

- A typical DB plan, with advantages based on longevity risk pooling, asset allocation, low fees, and professional management, has a 48 percent cost advantage compared to a typical individually directed DC plan.

- A DB pension costs 29 percent less than an "ideal" DC plan with below-average fees and no individual investor deficiencies.

- Annuitizing DC account balances—that is, converting the account balance at retirement into an insurance contract for lifetime income—does not erase the DB pension cost advantage. This is because insurance companies use a more conservative asset allocation and charge much higher fees than a DB pension. Annuities purchased at historical average interest rates only modestly decrease DC benefit costs, while annuities purchased at 2014 rates would increase benefit costs.

In other words, a typical DB plan provides equivalent retirement benefits at about half the cost of a typical DC plan, and 29 percent lower cost than an ideal DC plan modeled with very generous assumptions.

Conversely, it would be 91 percent and 41 percent more expensive for an typical DC plan and an ideal DC plan, respectively, to deliver the same level of retirement income as a typical DB plan. Thus DB pensions continue to offer a significant cost advantage. While shifting from a DB pension to a DC plan offers a way to reduce the investment risk borne by employers and taxpayers, this comes with an unavoidable tradeoff—either increased benefit costs or, more likely, significant retirement benefit cuts that are larger than the savings realized by the employer.

II. DEFINED BENEFIT AND DEFINED CONTRIBUTION PLANS

Employers who offer retirement benefits can consider two basic approaches: a traditional defined benefit (DB) pension plan and a defined contribution (DC) retirement savings plan. The DB plan is designed to provide predictable retirement *income* throughout a worker's retirement years. Assets are pooled, and investments are managed by professionals who are responsible for acting in the best interest of participants. The DC plan, in contrast, is focused on accumulating retirement *wealth* expressed as a lump sum, with individual participants ultimately responsible for garnering adequate investment returns and managing their own accumulated wealth throughout their retirement years. This would entail estimating how much they can safely withdraw each year of retirement without running out of money, attempting to evaluate the best annuitization alternative in the open market, or some combination of the two.

Each type of plan has certain distinguishing characteristics that influence its cost to employers and employees.

How DB Plans Work

While employers have a large degree of flexibility in designing the features of a DB plan, there are some features all DB plans share. DB plans are designed to provide employees with a predictable monthly benefit in retirement. The amount of the monthly pension is typically a function of the number of years an employee devotes to the job and the worker's pay—usually at the end of their career.[2] For example, the plan might provide a benefit in the amount of 1.5 percent of final average pay for each year worked. Thus, a worker whose final average salary was $50,000, and who had devoted 30 years to the job, would earn a monthly benefit of $1,875 ($22,500 per year), a sum that would "replace" 45 percent of her final average salary after she stops working. This plan design is attractive to employees because of the security it provides. Employees know in advance of making the decision to retire that they will have a steady, predictable income that will enable them to maintain a fairly stable and predictable portion of their pre-retirement standard of living.[3]

Benefits in DB plans are pre-funded. That is, employers (and, in the public sector, most employees) make contributions to a common pension trust fund over the course of a worker's career. These funds are invested by professional asset managers whose activities are overseen by trustees and other fiduciaries. A typical DB pension fund's asset allocation policy—i.e., the share of holdings allotted to different asset classes such as stock, bonds, and treasuries—is based on a careful analysis of plan demographics and liabilities as well as short- and long-term financial market projections.[4] The earnings that build up in the fund, along with the dollars initially contributed, pay for the lifetime benefits a worker receives when she retires.

How DC Plans Work

DC plans function very differently than do DB plans. First, there is no implicit or explicit promise of retirement income in a DC plan. Rather, the level of retirement income that an account will provide depends on a number of factors, such as the level of employer and employee contributions to the plan, the investment returns earned on assets, whether loans are taken or funds are withdrawn prior to retirement, and the individual's lifespan.

While DC plan assets are also held in a trust, that trust is comprised of a large number of individual accounts. DC plans are typically "participant directed," meaning that each individual employee can decide how much to save, how to invest the funds in the account, how to modify these investments over time, and how to withdraw the funds during retirement.

Retirement experts typically advise individuals in DC plans to change their investment patterns over their lifecycle. In other words, at younger ages, because retirement is a long way off, workers should allocate more funds to stocks, which have higher expected returns but also higher risks. As one gets closer to retirement, experts suggest moving money away from stocks and into safer but lower return assets like bonds. This is to guard against a large drop in retirement savings on the eve of retirement, or in one's retirement years.

The high degree of participant direction makes DC plans very flexible in accommodating individuals' desires, decisions, and

control. Unfortunately, a substantial body of empirical and experimental research indicates that this flexibility tends to lead to adverse outcomes. First, too many workers fail to contribute sufficient amounts to the plans.[5] Second, individuals' lack of expertise in making investment decisions can subject individual accounts to extremely unbalanced portfolios with too little or too much invested in one particular asset, such as stocks, bonds, or cash.[6] One team of researchers thus concluded, "The likelihood of investment success increases as the participant's involvement in investment decisions decreases."[7]

Another important difference between DB and DC plans becomes apparent at retirement. Unlike in DB plans, where workers receive regular monthly pension payments, in DC plans it is typically left to the retiree to decide how to spend down their retirement savings. Research suggests that many individuals struggle with this task, either drawing down funds too quickly and running out of money, or holding on to funds too tightly and enjoying a lower standard of living as a result.[8] In theory, employers that offer DC plans could provide annuity payout options, but in practice they rarely do.[9]

The Changing Retirement Benefit Landscape

Changing Asset Allocation and Risk Management Strategies among DB Pension Funds

Changes in the financial and regulatory environments for DB pensions over the last several years have prompted funds to shift financial risk management strategies. Notably, while governmental and corporate DB pension funds had similar asset allocations until 2008, including the share of investments in equities, different regulatory and demographic considerations led to diverging asset allocation after 2008.[10] Given this divergence, and the concentration of DB pension benefits and assets in the governmental sector, this study models a typical public pension's asset allocation.[11]

In the private sector, corporations began introducing 401(k) plans in the 1980s. Then in the early 21st century, many firms began to close or freeze existing DB pension plans. The long bull market in stocks from the 1980s to 2000 enabled corporate pension sponsors to either maintain pension plans with modest cash contributions or use their pensions as a source of income. Plan costs increased after the financial bubble burst. Then, after the passage of the Pension Protection Act of 2006, private employers faced new pension funding rules. While intended to safeguard retirement benefits promised to private sector workers, these regulations made pension funding and reported liabilities more volatile which contributed to additional DB pension plan freezes and terminations.[12] Other accounting and regulatory actions over the decades have added to this trend.

With no new workers entering the system, closed corporate pension plans face a shorter investment horizon. This dynamic, combined with the pension expense volatility created by new funding and accounting rules, motivated many corporate DB pension sponsors to de-risk their portfolios by shifting from stocks to bonds and treasuries.[13]

Public pension plans, in particular state and local government pensions, also faced new challenges in the aftermath of the 2008 financial crisis. Almost every state legislature enacted plan changes to enhance sustainability, and most included measures to increase employee contributions and reduce benefits for at least some employees.[14] Very few of these changes included eliminating the core DB plan.

Particularly germane to this study are the investment policy decisions made by many public pension funds. First, in response to a desire for reduced volatility and the low interest environment, pension fund trustees have reduced plan exposure to U.S. stocks and traditional fixed income securities, and further diversified funds by increasing the share of global stocks and alternative investments such as real estate, private equity, and commodities. Second, the changing financial landscape has also prompted many public pension funds to lower their rate of return assumptions. The asset-weighted median investment return assumption dropped from 8 percent in 2011 to 7.75 percent in 2014.[15]

Efforts to Improve DC Plans

The DC landscape has changed as well. Experts and policymakers have focused on addressing key problems in 401(k)-type plans related to fees, investment options, investor behavior, and retirement income outcomes.

An incremental decrease in fees has transpired due to increased regulatory scrutiny of 401(k) and IRA fees, and growing use of lower-cost index funds.[16] The U.S. Department of Labor issued regulations in 2010 and 2012 concerning the disclosure of 401(k) fees. According to the Investment

Company Institute, the average 401(k) equity fund expense ratio, exclusive of fees paid by employers, declined from 77 basis points in 2000 to 58 basis points in 2013.[17]

Annuities have garnered increasing interest among policymakers and regulators as a way to convert DC account balances into a lifetime income stream. Individual investment accounts are framed in terms of lump-sum retirement *wealth*, while the challenge facing savers is securing adequate *income* to last through retirement. Annuities are financial products in which a third party (typically an insurance company) promises a stream of income in return for a lump sum. However, the availability of annuities as a 401(k) payout option is limited, and overall participation rates remain low. They tend to be expensive, due to today's low interest environment, insurer profit objectives, marketing and administrative costs, and adverse selection.

Growing use of target asset allocation funds. The consensus resulting from a decade of behavioral finance research is that 401(k) participants routinely make asset allocation and investment mistakes, such as buying and selling holdings at the wrong time, failing to regularly re-balance their portfolios, or taking too little or too much risk in their asset allocation. Target asset allocation funds address part of this problem through automatic re-balancing. One such type of fund, called Target Date Funds (TDFs) or lifecycle funds, has gained favor among policymakers, retirement experts, and large employers in the US.[18] TDFs gradually and automatically shift their asset allocation from risky stocks to less risky bonds as a worker ages, based on their target retirement year. TDFs accounted for 15 percent of 401(k) account balances, with heavier representation among younger workers, in 2013.[19] These funds now account for the largest share of new 401(k) contributions. However, they are not a panacea for individual investor error, and most participants do not use TDFs as intended.[20]

A Note on Hybrid Retirement Benefits

There is growing interest in "hybrid" retirement benefits that combine some of the features of DB and DC plans, and ostensibly offload some risks onto employees while maintaining some of the retirement security offered by traditional DB pensions. There are two main types. One type is a "side by side" or "stacked" hybrid, in which the core retirement benefit consists of a combination of a DB pension (typically with less generous benefits) and a DC plan. The other is a "blend" between DB and DC such as a cash balance (CB) plan. Under a CB plan, each employee has a notional account balance, as the employer credits each employee with a set percentage of her annual pay plus an interest rate that is either predetermined or tied to an index. A CB plan is legally a DB plan—benefits are guaranteed, albeit as a lump sum, and assets are pooled in a trust and managed professionally. However, CB plan benefits typically are less generous than a traditional DB pension, and generally participants do not obtain longevity protection.

Importantly, the relative costs of hybrid plans depend largely on benefit structure. To the extent that hybrid benefits emphasize DB-like characteristics, they can be more cost efficient. To the extent that they off-load risks onto individual workers, they will be less cost efficient.

III. METHODOLOGY

We compare the relative costs of DB and DC plans by constructing a model that first calculates the cost of achieving a target retirement benefit in a typical public sector DB plan. We calculate this cost as a level percent of payroll over a career. We then calculate the cost of providing the same retirement benefit under two different types of DC plans—an "ideal" DC plan modeled with generous assumptions and a more typical individually directed DC plan. Additional details on our methodology, and sensitivity analyses that account for the impact of alternative economic and demographic assumptions, can be found in the Technical Appendix to this report.

Demographic Assumptions

Our model is based on a group of 1,000 newly-hired employees. For the purposes of simplicity, we give all individuals a common set of features. All newly hired employees are female teachers aged 30 on the starting date of their employment. They work for three years and then take a two-year break from their careers for child rearing. They return to work at age 35 and continue working until age 62. Thus, the length of the career is 30 years. By their final year of work, their salary has reached $60,000, having grown by 4 percent each year.[21] For modeling purposes, we assume that prior to retirement, no one dies, and there is no turnover within our pool of teachers.

Target Benefits

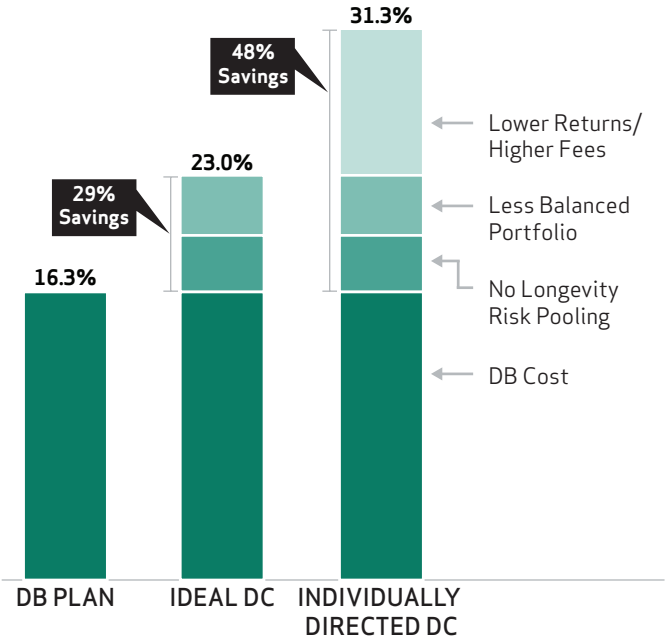
Next, we define a target retirement benefit that, combined with Social Security benefits, will allow our 1,000 teachers to achieve generally accepted standards of retirement income adequacy.[22] The target benefit is $32,036 per year or $2,670 per month. A cost of living adjustment is provided to ensure the benefit maintains its purchasing power during retirement. Thus, each teacher will receive a benefit equal to 53 percent of her final year's salary that adjusts with inflation, which we assume will be 3.0 percent per year. With this benefit and Social Security benefits, each teacher can expect to receive roughly 83 percent of her pre-retirement income—a level of retirement income that can be considered adequate, but not extravagant. We define certain parameters for life expectancy and investment returns. On the basis of all these inputs, we calculate the contribution—as a percentage of payroll—that will be required to fund our target retirement benefit through the DB plan over the course of a career. We do the same for the DC plans.

IV. FINDINGS: DB PLANS ARE STILL MORE COST EFFECTIVE

The cost of either a DB or DC plan depends, in the first instance, on the generosity of the benefits that it provides. However, for any given level of benefit, a DB plan will cost less than a DC plan. Conversely, on average a dollar invested in a DB plan will generate higher retirement income than a DC plan. *In other words, DB plans are more efficient.*

We find that the cost to fund the target retirement benefit under the DB plan comes to 16.3 percent of payroll each year. By comparison, we find that the cost to provide the same target retirement benefit is 31.3 percent of payroll under the individually directed DC plan and 23.0 percent under the ideal DC plan. As illustrated in **Figure 1**, the DB plan can provide the same benefit at a cost that is 48 percent lower than the individually directed DC plan and 29 percent lower than the ideal DC plan.

Figure 1:
Cost of DB and DC Plans as a Percentage of Payroll



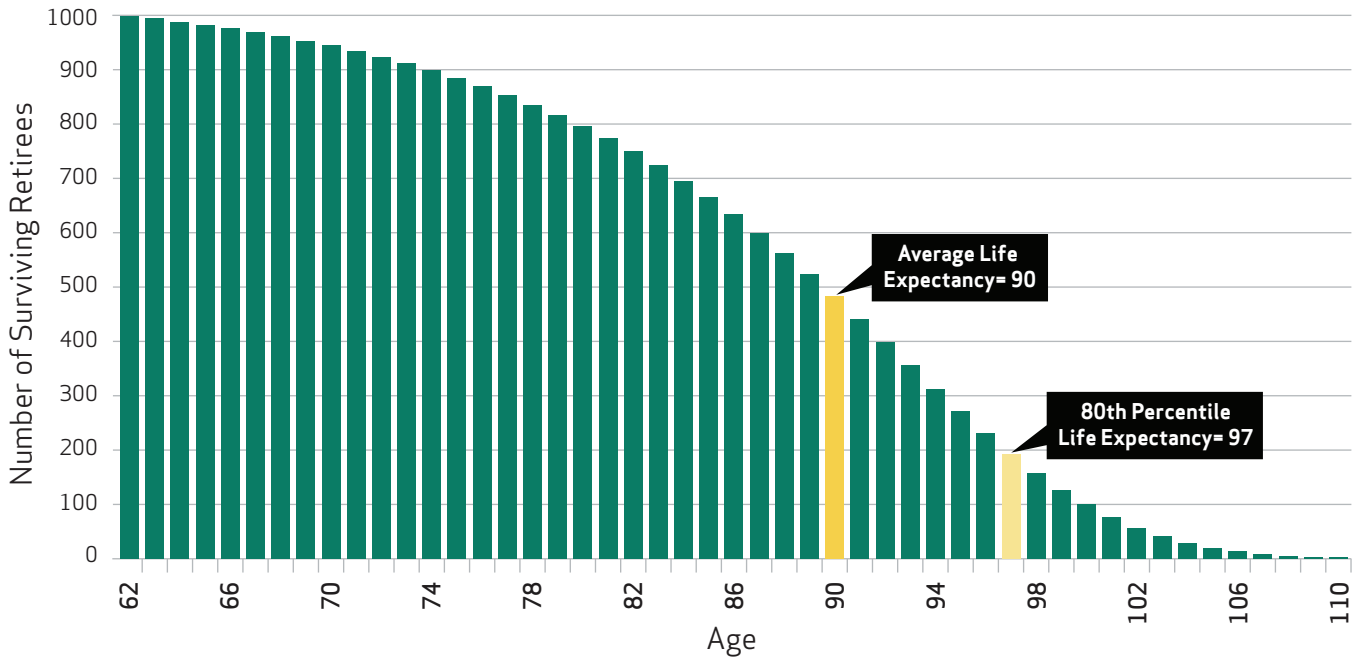
The DB cost advantage stems from differences in how benefits are paid out in each type of plan, how investment allocations shift in DC plans as individuals age, and how actual investment returns in DC plans compare with those in DB plans.

There are three primary reasons behind DB plans' cost advantage.

- First, because DB plans pool the longevity risks of a large number of individuals, these plans need only accumulate enough funds to provide benefits for the *average* life expectancy of the group. If individuals did this in a DC plan, they would face a 50 percent chance of running out of money in retirement. In order to reduce the risk of running out of funds to a reasonable level, individuals need to accumulate enough funds to last several years past average life expectancy. Even using only the 80th percentile life expectancy, which exposes participants to a one-in-five chance of running out of money, causes the DC plan to require significantly more funding.

- Second, because DB plans have a much longer investment horizon than individuals, they are able to take advantage of the enhanced investment returns that come from maintaining a balanced portfolio over a long period of time. The reason behind the longer investment horizon is that a mature DB plan has a mix of younger workers, older workers, and retirees, as younger workers continue to enter the plan. By contrast, individuals in DC plans must gradually shift to a more conservative asset allocation as they age, in order to protect against financial market shocks later in life. This means DB plans can ride out bear markets and keep a larger share of their investments in stocks and other assets that offer higher returns over the long term but fluctuate more in the short term compared to bonds and other fixed income securities. DB plans are also better positioned to take advantage of "illiquid" investments that offer premium returns—for instance, real estate and private equity. These factors allow DB pensions to ultimately earn higher gross returns based on asset allocation.

Figure 2: **Longevity of 1,000 Retired Female Teachers**



- Third, DB plans achieve even greater investment returns compared with typical individually directed DC plans based on lower fees and professional management. Superior returns can be attributed partly to lower fees that stem from economies of scale: assets are pooled in DB plans, where DC plans consist of individual accounts. In addition, because of professional management of assets, DB plans achieve superior investment performance compared to the average individual investor. DB investment managers have fiduciary duty and must meet the standard of prudence. In contrast, it is well-documented that individual investors make inappropriate decisions regarding both asset allocation and market timing—and thus tend to earn returns that lag behind market returns.[23] This effect is sometimes called "behavioral drag."

Longevity Risk Pooling

Longevity risk describes the uncertainty an individual faces with respect to their exact lifespan. While actuaries can tell us that, on average, our pool of female teachers who are 30 today and who will retire at age 62 will live to be 90, they can also predict that some will live only a short time, and some will live to be over 100.[24] **Figure 2** illustrates the longevity patterns among our 1,000 teachers. With each passing year, fewer retirees are still living. Age 90 corresponds to the year when roughly half of retirees are still alive.

In a DB plan, the normal form of benefit is a lifetime annuity, that is, a series of monthly payments that lasts until death. A DB plan with a large number of participants can anticipate the fact that some individuals will live longer lives and others will live shorter lives. Thus, a DB plan needs only to ensure that it has enough assets set aside to pay for the average life expectancy of all individuals in the plan, or in this case, to age 90. Based on our target benefit level, the DB plan needs to have accumulated approximately $500,000 for each participant in the plan by the time they turn 62. This amount is projected to be sufficient for every individual in the plan to receive a regular, inflation-adjusted monthly pension payment that lasts as long as they live. The contribution level required to fund this benefit over a career comes to 16.3 percent of payroll.

Total annual payments out of the DB plan will have a hump-shaped pattern as seen in **Figure 3**. The amount of benefits paid out will increase for a number of years, because the effect of inflation adjustments is greater than the effect of individuals gradually dying off. At age 82, the impact of retiree deaths overtakes the effect of the cost of living adjustments, and payments decline with each passing year. In the DB plan, every retiree receives a steady inflation-adjusted monthly income that lasts until her death.

Figure 3: **Total Payments under the Defined Benefit Plan**

Next, we contrast this situation with that in a DC plan. In the vast majority of cases, individuals must self-insure longevity risks (or purchase an annuity, as discussed below). This can be an expensive proposition.

Because an individual in a DC plan does not know exactly how long she will live, she will probably not be satisfied with a benefit sufficient to last only for the *average* life span, for if she lives past age 90, she will have depleted her retirement savings. For this reason, an individual will probably want to be sure that she has enough money saved to last for several years past average life expectancy.

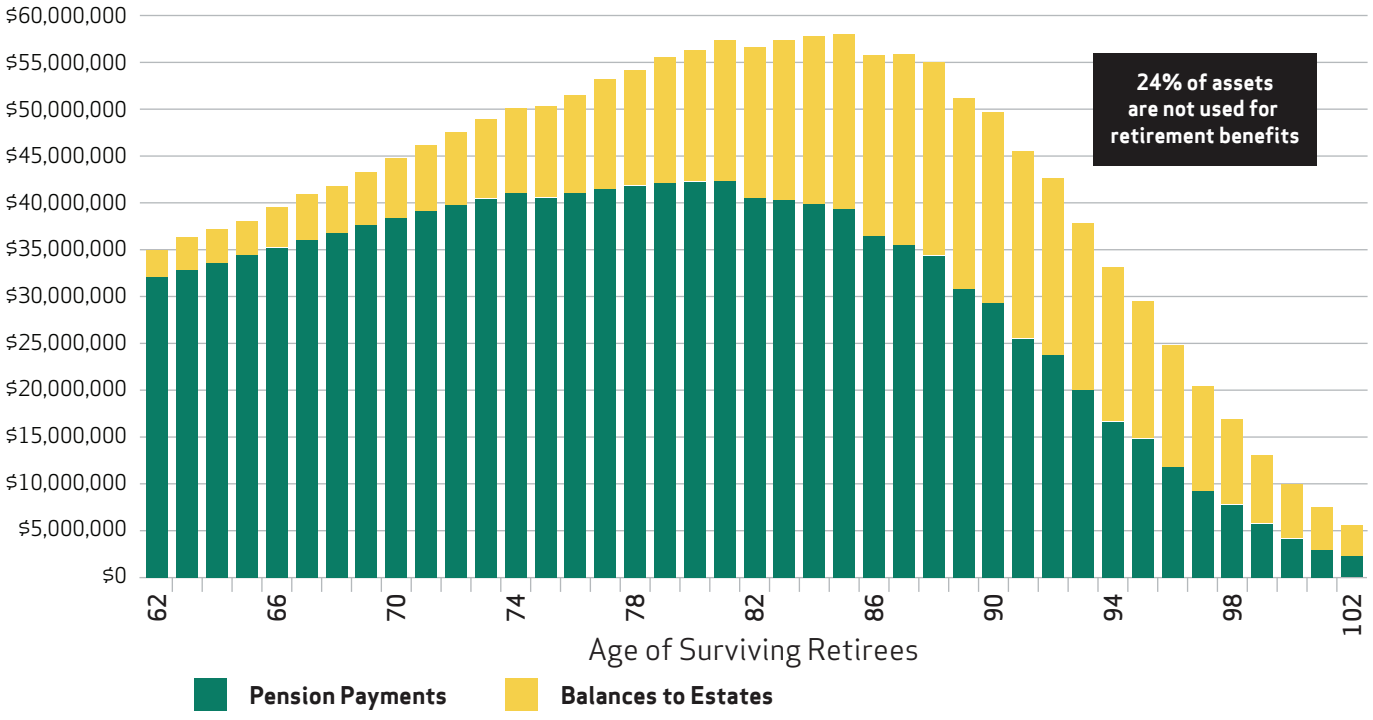
We modeled the DC plan to provide income for the 80th percentile life expectancy, age 97. It corresponds to the age beyond which only 20 percent of individuals survive.[25] This is a conservative target. In fact, our mortality table indicates that it is likely that one lucky individual out of the 1,000 will celebrate her 111th birthday. It is not clear that most individuals will be satisfied with an 80 percent chance of not outliving their money, and in using this life expectancy, we understate the cost of the DC plan. **Figure 4** illustrates the payout pattern under the DC plan, where individuals withdraw funds on an equivalent basis to the DB plan until age 97—that is, in a series of regular, inflation-adjusted payments. After age 97, there are no more withdrawals. The money has simply run out.

Of course, those 20 percent of individuals who do survive beyond age 97 would want to avoid the possibility of having their retirement income reduced to zero. It is likely that individuals will respond to longer lives by gradually reducing their withdrawals from the plan to avoid running out of money. This means that those with very long lives will see their standard of living reduced significantly. At the same time, because it is difficult to exactly predict one's lifespan, some retirees who live past age 97 will reduce their withdrawals more than they actually need to. Finally, if a retiree dies before exhausting all of her retirement savings, the money in the account passes to her estate. The funds that were intended to be pension benefits become death benefits paid to heirs instead. **Figure 5** illustrates the combined effect of reduced withdrawals and estate payments.

The aggregate amount of money transferred to estates is substantial—totaling 24 percent of all assets accumulated in the plan in this illustration. While some individual heirs will benefit from these intergenerational transfers of wealth, such transfers are not economically efficient from a taxpayer or employer perspective. Because heirs did not provide services from which the employer/taxpayer benefited, providing additional benefits to heirs is economically inefficient. Moreover, these additional "death benefits" are not tied in any direct way to an individual employee's productivity during her working years.

Figure 4: **Total Benefit Payments under the DC Plan Based on Life Expectancy of 97**

Figure 5: **Total Benefit and Estate Payments under the DC Plan Based on Adjusted Withdrawal Strategy**



In addition, although annuities purchased through private insurance companies may offer full protection against longevity risk, this protection comes at a significantly higher cost than the same protection provided by a DB pension. (See "Impact of Annuitizing DC Account Balances" on p.16.)

DB plans avoid this problem entirely. By pooling longevity risks, DB plans not only provide all participants in the plan with enough money to last a lifetime, but also accomplish this goal with less money than would be required in a DC plan. Because DB plans need to fund only the *average* life expectancy of the group, rather than the *maximum* life expectancy for all individuals in the plan, less money needs to be accumulated in the pension fund. Remember that the DB plan needs to accumulate about $500,000 for each participant in the plan by the time they turn 62 in order to fund the target level of benefit. In contrast, DC plans must accumulate at least $600,000 per participant, or nearly $100,000 more, in order to minimize the likelihood of that individual running out of funds. This additional amount extends retirement income from average life expectancy to the 80th percentile life expectancy. **In order to accumulate the additional amount necessary for DC plan participants to self-insure against this level of longevity risk, contributions to the plan would climb to 19.6 percent of pay, from 16.3 percent under the DB plan** (an increase of 20 percent). This assumes the same net investment returns. However, as we demonstrate below, two remaining factors contribute to DC plans having inferior returns compared to the DB plan.

Maintenance of Portfolio Diversification (Staying Invested in Equities)

A retirement system that achieves higher investment returns can deliver a given level of benefit at a lower cost. All else being equal, the greater the level of investment earnings, the lower contributions to the plan will need to be.[26] Prior research substantiates DB plans' significant advantage in investment returns, as compared with DC plans.

Part of the reason why DB plans tend to achieve higher investment returns as compared with DC plans is that they are long-lived. That is, unlike individuals, who have a finite career and a finite lifespan, a DB pension fund endures across generations; thus a DB plan, unlike the individuals in it, can maintain a well-diversified portfolio over time. This well-diversified portfolio will include investments which are expected to earn higher returns than a less diversified portfolio, which focuses on more secure but lower-returning asset classes.

In DC plans, individuals' sensitivity to the risk of financial market shocks increases as they age. The consequences of a sharp stock market downturn on retirement assets when one is in their late 50s are substantial, compared to when one is in their 20s with sufficient time to recover their losses.

For this reason, individuals are advised to gradually shift away from higher risk/higher return assets as they approach retirement. While this shift offers insurance against the downside risk of a bear market, it also sacrifices expected returns since more money will be held in bonds, cash, and similar assets that offer lower rates of return in exchange for more security. A reduction in expected investment returns will require greater contributions to be made to the plan in order to achieve the same target benefit.

Researchers find a large and persistent gap when comparing investment returns in DB and DC plans, although the gap has narrowed somewhat over time. A 2013 report from CEM Benchmarking finds that DB pensions outperformed DC plans in average by 99 basis points, net of fees, over the 17 years ending in 2013—largely due to differences in asset mix.[27] Watson Wyatt found that DB plans outperformed DC plans by an annual average of 76 basis points, net of investment expenses, from 1995 to 2011.[28]

These studies aggregate asset allocation and investment returns. This does not present much of a problem for DB plans, because asset allocation is relatively consistent across large funds that tend to be mature and have roughly similar demographic profiles. However, aggregated DC plan data tells us less about the "typical" investor because there is a large dispersion of asset allocations and returns among individual investors. In addition, aggregated data is of limited usefulness in determining long-term returns over a typical individuals' career and retirement years as their asset allocation shifts from equities to fixed income securities, as prescribed by the TDF or lifecycle investment strategy.

In order to estimate gross investment returns for the DB and DC plans over our teachers' working and retirement years, we start with asset allocation for each plan and then apply a uniform set of assumptions about the long-term returns for each asset class. The DB plan is assumed to have an asset allocation typical of a large public sector DB plan. In the ideal and individually directed DC plans, participants are expected to gradually shift out of higher risk/higher return assets in favor of lower risk/lower return assets.

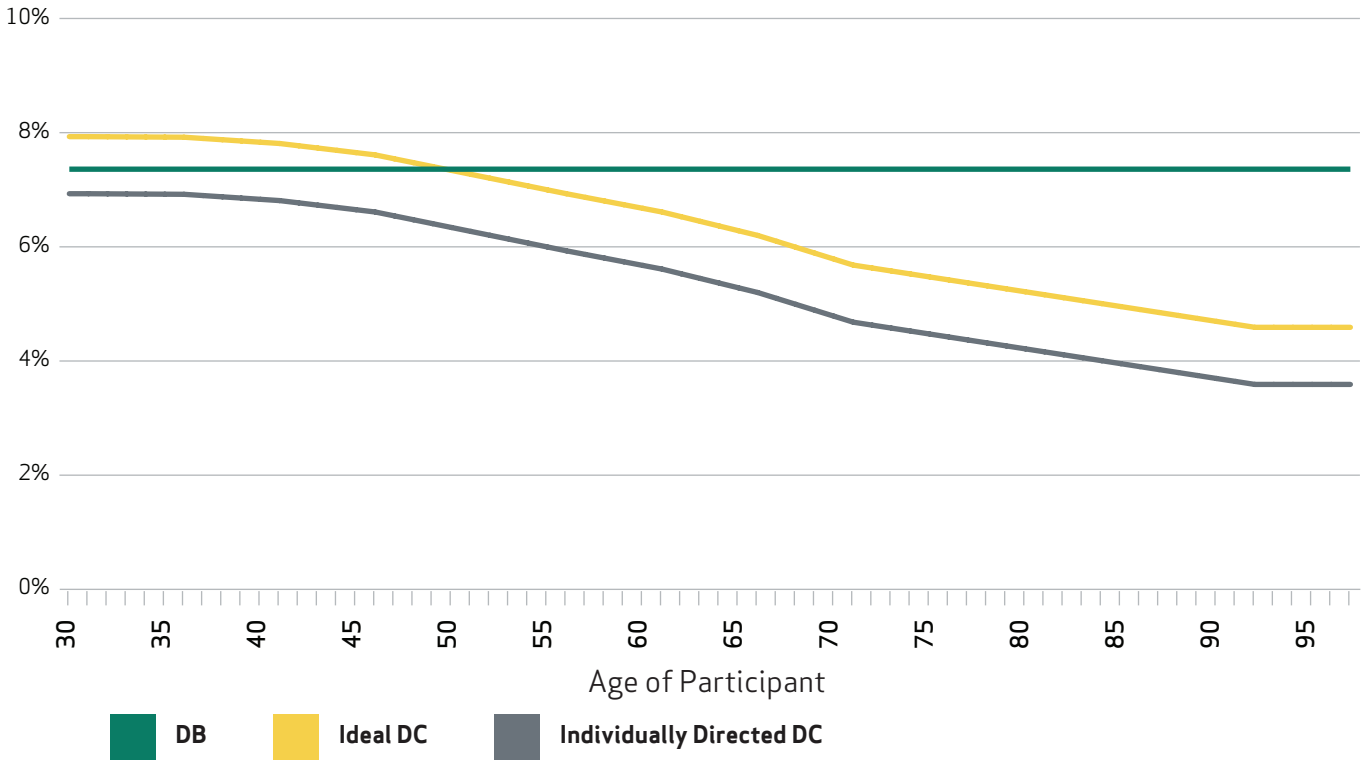
Figure 6 shows the expected net annual investment return by age for the DB plan and both DC plans. In our model, the well-diversified DB plan is expected to achieve investment returns of 7.36 percent per year, net of fees. The net returns for the ideal DC plan (modeled with the same expenses and investment skill assumptions as the DB plan, as we will later explain) show that while the typical TDF asset allocation glide path used for the DC plans in this study earns higher returns than the DB plan during the first half of a teacher's career, those returns drop below the DB plan when she is in her late 40s. To preserve her retirement wealth after she stops working, the teacher needs to reduce her exposure to equities even more. This results in a sacrifice of expected annual return of 2.8 percent by age 97. For detailed DB and DC asset allocation and projected gross investment returns, see Table A1 in the Technical Appendix.

We find that the shift in portfolio allocation has a modest, but nonetheless significant, effect on cost. Specifically, we find that the per-retiree amount that must be accumulated in the DC plan by retirement age now climbs to nearly $700,000. By comparison, the DB plan requires about $500,000. **After accounting for asset allocation in addition to longevity risk, contributions required to fund the target benefit now climb to 23.0 percent of payroll in the DC plans compared to 16.3 percent of payroll under the DB plan** (an increase of 41 percent). This summarizes the cost difference between the ideal DC plan and the DB plan. To arrive at the full cost difference for the individually directed DC plan, differences in investment expertise and expenses must also be taken into account.

Superior Net Returns Compared to Individually Directed DC Plan

In addition to asset allocation, another important reason why DB plans achieve higher investment returns than DC plans is that DB pension assets are pooled and professionally managed. Our model attributes a one percentage point "drag" on the investment returns in individually directed DC plans, based on fees and well-documented individual investor behavior.

Figure 6: **Expected Annual Investment Return (Net of Fees)**



Expenses paid out of plan assets to cover the costs of administration and asset management reduce the amount of money available to provide benefits. As a result, a plan that can keep these costs down will require lower contributions. By pooling assets, large DB plans are able to drive down asset management and other fees. For example, researchers at Boston College find that asset management fees average just 25 basis points (e.g., 0.25 percent) for public sector DB plans. By comparison, asset management fees for private sector 401(k) plans range from 60 to 170 basis points.[29] Thus, private DC plans suffer from a 35 to 145 basis point cost disadvantage, as compared with public DB plans. On their face, these differentials may appear small, but over a long period of time, they compound to have a significant impact. To illustrate, over 40 years, a 100 basis point difference in fees compounds to a 24 percent reduction in the value of assets available to pay for retirement benefits.[30]

TDF expenses vary depending on whether the underlying funds are actively managed or passively managed (e.g., index funds). A Morningstar survey found that new contributions to TDFs have been shifting towards the latter, and that asset-weighted expense ratio for TDFs in 2012 was 91 basis points, down from 1.04 percent in 2008.[31]

Administrative costs are largely driven by scale. Thus, a large DB plan or DC plan can have opportunities to negotiate minimized administrative expenses. A DC plan involves costs that do not exist in a DB plan, such as the costs of individual recordkeeping, individual transactions, and investment education to help employees make good decisions. However, DB plans, unlike DC plans, bear the administrative costs of making regular monthly payments after retirement.

But fees are only part of the story; differences in the way retirement assets are managed in DB and DC plans play a substantial role. As previously discussed, investment decisions in DB plans are made by professional investment managers, whose activities are overseen by trustees and other fiduciaries.

Research has found that DB plans have broadly diversified portfolios and managers who follow a long-term investment strategy.[32] We also know that the average individual in DC plans, despite their best efforts, often falls short when it comes to making sound investment decisions.

Furthermore, studies show that over the long term, individual investor level returns significantly lag behind the returns of any individual asset class or benchmark—largely due to inappropriate investment decisions.[33] For example, during the 2008 financial crisis, individual participants generally failed to re-balance their asset allocation, and those who did shift assets incurred significant losses by fleeing from equities near the bottom of the market.[34] In 2012 and 2013, investors pulled funds out of asset classes before they experienced price increases and into asset classes that were about to experience price drops.[35]

We assume no net disadvantage on the basis of fees or investor skill for the ideal DC plan compared to the DB plan. This is a generous assumption given real life experience with TDF use and with DC investor behavior in general.

We do, however, isolate the impact of expenses and fees from the impact of investment skill for the individually directed DC plan. We assume that a 40 basis point disadvantage in fees and an estimated 60 basis point disadvantage from individual investor "behavioral drag" total to a net 100 basis point (1.00 percent per year) disadvantage in individually directed DC plan investment returns. Although the data clearly support using a 125 basis point or more combined effect, we continue to use only a 100 basis point disparity, as was used in the 2008 study. The Technical Appendix explores the impact of other levels of disparity.

The 1.00 percent drag on individually directed DC plan returns compounds over time to create a significant cost disadvantage relative to the DB plan. In particular, we find that the amount which must be set aside for each individual at retirement age now climbs to about $800,000 (compared to the roughly $500,000 required in the DB plan). **Thus after accounting for differences in net returns due to investment expertise and fees—in addition to the longevity risk and asset allocation factors described above—the level of required contributions climbs again for the individually directed DC plan, this time to 31.3 percent of payroll, compared to 16.3 percent under the DB plan** (an increase of 91 percent).

Taken together, the economies that stem from investment pooling and longevity risk pooling can result in significant cost savings to employees and employers/taxpayers. **In our model, required contributions to fund a given level of retirement benefit are 48 percent lower in the DB plan compared with the individually directed DC plan, and 29 percent lower compared to the ideal DC plan.**

V. SUMMARY OF RESULTS: DB PLANS REDUCE COSTS BY NEARLY HALF

Our analysis clearly demonstrates that DB plans are far more cost-effective than DC plans. We find that to achieve roughly the same target retirement benefit that will replace 53 percent of final salary, the DB plan will require contributions equal to 16.3 percent of payroll, whereas the individually directed DC plan will require contributions to be almost twice as high as the DB plan—31.3 percent of payroll. Even the "ideal" DC plan, generously modeled with the same fees and investor skill as the DB plan—provides benefits at a substantially higher cost of 23.0 percent of payroll.

We find that due to the effects of longevity risk pooling, maintenance of portfolio diversification, and greater investment returns over the lifecycle, a DB plan can provide the same level of retirement benefits at about 29 percent lower cost than an ideal DC plan and about 48 percent lower cost than an individually directed DC plan.

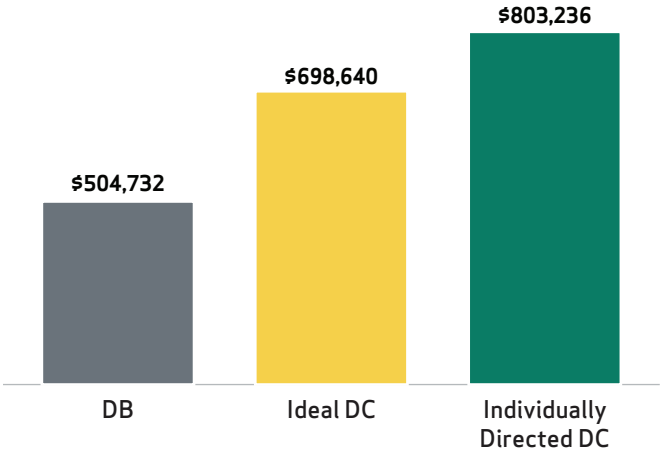
Table 1 breaks down the cost savings realized by the DB plan relative to the individually directed DC plan. First, the longevity risk pooling that occurs in the DB plan accounts for 10 percent cost savings. Second, DB plans' ability to maintain a more diversified portfolio drives another 11 percent cost savings. Third, superior net investments returns across the lifecycle generate an additional 27 percent reduction in cost compared to an individually directed DC plan—bringing the total cost savings to 48 percent.

Our results also indicate that DB plans can do more with less. That is, they can ensure that all individuals in the plan (even those with very long lives) are able to enjoy an adequate retirement benefit that lasts a lifetime, at the same time that they require less money to be contributed to a retirement plan and fewer assets to accumulate in the plan. We calculated the amount of money that would be required to be set aside for each retiree in each type of plan, to provide a modest retirement benefit of about $2,700 per month. As shown in **Figure 7**, at retirement age, the DB plan requires only about $500,000 to be set aside for each individual, whereas the ideal DC plan requires about $700,000 and individually directed DC plan requires about $800,000. The difference—about $200,000 and $300,000 for each and every employee under ideal DC plan and individually directed DC plan, respectively—illustrates that the efficiencies embedded in DB plans can yield large dollar savings for employers, employees and taxpayers.

Table 1: **Tallying DB Plan Cost Savings Compared to Individually Directed DC Plan**

Source	Savings
1. Longevity risk pooling	10%
2. Maintenance of portfolio diversification (staying invested in equities)	11%
3. Lower fees and professional management	27%
All-in cost savings in DB plan	**48%**

Figure 7:
Per Employee Amount Required at Age 62 DB Plan vs. DC Plan



Our findings indicate that DB plans provide a better bang for the buck when it comes to providing retirement income. We find that a DB plan can provide the same level of retirement income at almost half the cost of an individually directed DC plan. Even compared to an ideal DC plan with generous assumptions about fees and investor skill, a DB plan delivers the same benefit for 29 percent less cost. An analysis of the costs of providing benefits for a different population—male public safety workers—is provided in the Technical Appendix, and finds similar results. Hence, DB plans should remain a centerpiece of retirement income policy and practice, especially in light of current fiscal and economic constraints.

Impact of Annuitizing DC Account Balances

Although this is not common, some DC plans offer individuals the ability to purchase annuities at retirement. This has sometimes been cited as a solution to the longevity risk obstacle discussed previously, and would eliminate the risk of running out of money no matter how long an individual lives.

However, our analysis indicates that the purchase of annuities does not overcome the inherent shortfall of DC plans *vis-à-vis* DB plans. This occurs for three reasons. First, insurance companies have inherent costs that employer sponsored DB plans do not. These include profit margins, risk charges, marketing costs, administration costs, and other costs. Second, insurers have capital requirements which essentially mean that they typically invest in safer fixed-income securities, while ongoing DB plans can invest more heavily in equities and earn greater investment returns. And third, current interest rates are extraordinarily low, making annuity costs more expensive than during most historical periods. Fluctuating financial market conditions can result in wide disparities in annuity income among individuals retiring with similar accumulated account balances at different points in time.

Many experts believe that the current low interest rate environment will revert to normal, so we have modeled annuitization both at 2014 rates as well as at rates based on investment return 1.0 percent per year higher than currently available. **Table 2** compares the various alternatives.

Table 2. **Impact of Annuitization on DC Plan Funding Requirements**

Plan	Target Balance at Retirement	Required Contribution (Percentage of Payroll)
DB	$504,732	16.3%
Ideal DC (without annuities)	698,640	**23.0%**
Individually Directed DC (without annuities)	803,236	31.3%
Ideal DC with annuities – 2014 rates*	771,752	**25.4%**
Ideal DC with annuities – significantly improved rates	631,118	**20.9%**

*Average rates as of April 2014 from AnnuityShopper.Com, adjusted for projected mortality tables to age 62 female.

As can be seen from the table above, while annuities can completely resolve an individual's mortality risk, this insurance today comes at a significant cost. Many experts believe that the current low interest rate environment will not last forever. If this happens, annuities may become a more cost-efficient option, but the nature of third party private annuities will prevent them from becoming as efficient as well-managed DB plans.

VI. CONCLUSION

Despite notable changes in the retirement benefit landscape since 2008, including some improvement in DC performance and fees, DB pensions retain their cost advantage as a means of providing retirement benefits to workers. In this study, we compared the cost of providing equivalent benefits through a typical large public sector DB plan, an ideal DC plan, and an individually directed DC plan. Even compared to the ideal DC plan with no disadvantage in terms of fees and investor skill, the DB plan reduces costs based on longevity risk pooling and the maintenance of portfolio diversification. And when we examine the individually directed DC plan with more realistic assumptions regarding fees and investor skill, the DB plan realizes a hefty additional cost advantage due to its low expenses and professional management of assets.

The sources of cost savings in DB plans reflect, at a very basic level, the differences in how DB and DC plans operate. Group-based DB plans provide lifetime benefits and feature pooled, cost-efficient, professionally managed assets. These features drive significant cost savings that benefit employers, employees, and taxpayers. While well-designed DC plans can theoretically mimic some of these advantages—for instance, employers may select low-fee TDFs as a default investment option for their workers—DB plans would still retain their advantages of longevity risk pooling and long-term portfolio diversification. Using private annuities to convert DC account balances at retirement into a lifetime income stream does not close this gap because such annuities are expensive, especially when they include the kind of inflation protection offered by public DB plans.

When considering our results, it is important to keep in mind that in our effort to construct an "apples to apples" comparison, we made a number of simplifying assumptions that actually reflected more favorably on DC plans. For instance, we did not model any asset leakage from either the ideal or individually directed DC plan before retirement through loans or early withdrawals. We also assumed that individuals followed a sensible "Goldilocks-like" withdrawal pattern in retirement—not too fast, not too slow, but just right. We used conservative estimates of the difference in actual investment returns between DB and DC plans. And, we used 80th percentile life expectancy to project required accumulations in the DC plans, rather than "full" life expectancies.

Thus, if anything, our analysis underestimates the cost of providing benefits in a DC plan and thereby understates the cost advantages of DB plans.

Due to the built-in economic efficiencies of DB plans, employers and policymakers should continue to carefully evaluate claims that "DC plans will save money." As discussed, benefit generosity is a separate question from the economic efficiency of a retirement plan. While either type of plan can offer more or less generous benefits, DB plans have a clear cost advantage for any given level of retirement benefit. Consequently, shifting from a DB plan to a DC plan and maintaining the same contribution rate will generate significant cuts in retirement income. Considering the magnitude of the DB cost advantage, the consequences of a decision to switch to a DC plan could be dramatic for employees, employers, and taxpayers.

Finally, policymakers should consider proposals that can strengthen existing DB plans and promote the adoption of new ones. When viewed against the backdrop of workers' increasing insecurities about their retirement prospects and the economic and fiscal challenges facing employers and taxpayers, now more than ever, policymakers ought to focus their attention and energy on this important goal. The very features that make DB plans attractive to employees drive cost savings for employers and taxpayers. In this way, DB plans represent a rare "win-win" approach to achieving economic security in retirement that should be recognized and replicated.

TECHNICAL APPENDIX: CALCULATING THE COST SAVINGS EMBEDDED IN DB PLANS

Methodology

We calculate the cost, expressed as a level percent of payroll over a career, of achieving a target benefit in a typical DB plan and compare that with the cost of providing the same target benefit in a typical DC plan.

We begin by constructing a cohort of 1,000 newly-hired employees. For the purposes of simplicity, we give this cohort a common set of features. All newly-hired employees are age 30 on the starting date of their employment, and they are all female teachers. They work for three years and then take a two-year break from their careers to have and raise children. They return to work at age 35 and continue working until age 62. Thus, the length of the career is 30 years. By their final year of work, their salary has reached $60,000, having grown by 4 percent each year.

Modeling DB Plan Benefits and Costs

The DB plan provides a benefit in retirement equal to 1.85 percent of final average salary for each year worked. This represents the median benefit among DB plans covering public employees who are also covered by Social Security.[36] Final average salary is calculated on the basis of the final three years of one's career, which in this case is $57,722. Thus, the initial benefit in the DB plan is $32,036 per year or $2,670 per month.

The DB plan provides a cost of living adjustment that ensures the benefit maintains its purchasing power during retirement. Inflation is projected at 3.0 percent per year. Thus, each individual in our cohort will receive a benefit equal to 53 percent of her final year's salary that adjusts with inflation. This DB plan (in combination with Social Security) would allow an employee to meet generally accepted standards of retirement income adequacy, or roughly 83 percent of pre-retirement income.[37]

DB plans typically offer married participants the ability to receive joint-and-survivor annuity benefits, whereby when the retiree dies, her spouse can continue to receive a monthly benefit that will last the spouse's lifetime. But the retiree pays the cost of this survivor's benefit. That is, the monthly benefit that would be payable on a single-life basis will be reduced by an actuarially determined factor to account for the fact that payments may continue if the retiree dies before her spouse. Therefore, for simplicity, we model all benefit payouts on a single-life basis (and do the same for the DC plan), using the Generational RP-2014 Healthy Female Annuitants mortality table with projection under scale MP 2014 (hired in 2014 at age 30).[38]

In order to model the contributions that are required to fund these benefits, we start by establishing expected investment returns based on asset allocation. In order to construct the asset allocation for the DB pension, we drew on the latest available average public pension asset allocation data from surveys from a number of sources: Wilshire, Cliffwater, CEM Benchmarking, and NASRA/NCTR Public Fund Survey. In particular, these sources were used to set allocations to broad asset categories, such as domestic stocks, domestic bonds, global stocks, global bonds, private equity, real estate, other alternatives, and cash. For more detailed categories, we drew on proprietary data provided by CEM Benchmarking and discussions with Callan. The resulting asset allocations are listed in **Table A1**.

Our expected investment returns for each asset class are based on a weighted average of the rate of return projections in the 2014 Survey of Capital Market Assumptions conducted by Horizon Actuarial Services (**Table A1**).[39]

We estimate DB plan expenses of 45 basis points. A study from the Center for Retirement Research at Boston College found average expenses to be 43 basis points for public DB plans and 97 basis points for DC plans.[40] Census data from 2012 indicates 45 basis points for state-administered DB plans, inclusive of both investment and administrative expenses.[41]

Based on this methodology, the DB plan is expected to achieve nominal investment returns of 7.36 percent per year, net of

Table A1. **Plan Asset Allocation Assumptions and Projected Gross Returns**

Asset Class	Projected Long Term Returns	DB Plan	DC Plan Asset Allocation Glidepath by Age of Worker/Retiree										
			26	31	36	41	46	51	56	61	66	71	92
PUBLIC EQUITIES		**50.93%**	**89.20%**	**89.19%**	**89.16%**	**85.99%**	**79.95%**	**70.11%**	**61.37%**	**53.67%**	**43.26%**	**30.20%**	**0.00%**
US - Large Cap	8.5%	24.79%	54.05%	54.03%	54.10%	52.30%	48.60%	42.58%	37.29%	32.69%	26.49%	17.25%	–
US - Small Cap	8.9%	5.72%	8.31%	8.32%	8.28%	7.86%	7.27%	6.48%	5.67%	4.92%	3.80%	4.05%	–
Non-US - Developed	8.8%	13.94%	22.87%	22.88%	22.82%	21.95%	20.33%	17.82%	15.65%	13.64%	10.93%	8.28%	–
Non-US - Emerging	9.8%	6.47%	3.96%	3.96%	3.96%	3.89%	3.76%	3.22%	2.75%	2.41%	2.03%	0.62%	–
FIXED INCOME		**27.22%**	**9.63%**	**9.63%**	**9.67%**	**12.83%**	**18.85%**	**28.75%**	**37.56%**	**45.29%**	**55.74%**	**69.80%**	**100.00%**
US Corporate Bonds - Core	5.3%	12.91%	5.02%	4.89%	4.76%	7.23%	12.45%	21.38%	26.41%	28.04%	31.57%	39.20%	56.16%
US Corporate Bonds - Long Duration	5.9%	3.23%	–	–	–	–	–	–	–	–	–	–	–
US Corporate Bonds - High Yield	7.1%	3.46%	3.19%	3.20%	3.22%	3.21%	3.16%	2.95%	2.79%	2.63%	2.61%	–	–
Non-US Debt - Developed	4.8%	1.31%	1.00%	1.00%	1.00%	1.65%	2.40%	3.10%	3.85%	4.80%	6.20%	13.90%	19.91%
Non-US Debt - Emerging	6.6%	0.41%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.35%	0.34%	0.35%	–	–
US Treasuries (Cash Equivalents)	4.1%	2.44%	0.06%	0.18%	0.33%	0.38%	0.42%	0.68%	3.66%	5.36%	7.45%	–	–
TIPS	4.6%	3.46%	0.02%	0.02%	0.02%	0.02%	0.08%	0.31%	0.52%	4.12%	7.57%	16.70%	23.93%
ALTERNATIVES		**21.88%**	**1.18%**	**1.19%**	**1.18%**	**1.18%**	**1.20%**	**1.15%**	**1.08%**	**1.04%**	**1.01%**	**0.00%**	**0.00%**
Private Equity	10.9%	8.25%	–	–	–	–	–	–	–	–	–	–	–
Real Estate	7.1%	7.09%	0.68%	0.68%	0.68%	0.68%	0.66%	0.60%	0.55%	0.52%	0.48%	–	–
Commodities	8.3%	1.88%	0.50%	0.51%	0.50%	0.50%	0.54%	0.55%	0.53%	0.53%	0.53%	–	–
Hedge Funds	7.5%	4.57%	–	–	–	–	–	–	–	–	–	–	–
TOTAL		**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
GROSS RETURN		**7.81%**	**8.38%**	**8.38%**	**8.37%**	**8.26%**	**8.06%**	**7.72%**	**7.38%**	**7.06%**	**6.65%**	**6.13%**	**5.04%**
INFLATION ASSUMPTION	**3.0%**												

Totals may not add up exactly due to rounding.

fees. Readers should exercise caution in comparing this rate of return to expected returns reported by individual public pension funds, because funds tend to use higher inflation assumptions in their forecasting. We used an inflation assumption of 3.0 percent in this study for benefit increases as well as for capital market expectations.

On the basis of these inputs, we calculate the contribution that will be required to fund this benefit through the DB plan over the course of a career, and express this as a level percent of payroll. We find that the cost to fund the target retirement benefit, smoothed over a career, comes to 16.3 percent of payroll. Contributions could be made entirely by the employer or, given public sector regulations, may be split between the employer and employee.

Modeling DC Plan Benefits and Costs

Modeling the cost of the target retirement benefit in the DC plan requires some adjustments based on what we know about how DC plans differ from DB plans. First, because employees are not provided with an annuity benefit at retirement under the DC plan, we determine the size of the lump sum amount that an individual would need to accumulate by their retirement date in order to fund a retirement benefit equivalent to that provided by the DB plan (including inflation adjustments) for a period of 35 years, or to age 97. This represents the 80th percentile life expectancy of female teachers who are now 30 years old when they retire at age 62. It corresponds to the age beyond which 20 percent of individuals survive, and therefore still poses a significant risk to DC participants of outliving their savings. In fact, our mortality table indicates that one individual out of 1,000 will survive to 110.

Thus our model underestimates the cost of funding retirement benefits through a DC plan: one out of five individuals will experience a reduced standard of living, compared to what they would experience under a DB plan. These individuals would be likely to respond to a long life by gradually reducing their withdrawals from the plan to avoid the possibility of having their retirement income reduced to zero.

We assumed that the DC plan would be invested in a TDF, which automatically adjusts asset allocation from stocks to bonds as a worker approaches retirement. We estimated the asset allocation glide path of TDFs from Vanguard and Fidelity, from age 30 to age 71, based on data for multiple target date funds ranging from 2010 to 2045. These TDFs are set for target retirement dates spaced 5 years apart. Then we averaged the asset allocations from the two providers, which together represent the majority of assets in the TDF market.[42] See **Table A1** for the asset allocation trajectory.[43]

To model the impact of the shift to a more conservative portfolio allocation beyond age 71, we have individuals begin to shift their portfolio allocation to gradually reduce the share held in equities to zero and increase the holdings of cash and liquid investments, treasuries and agency debt, and corporate bonds to 100 percent by age 97. The investment/withdrawal strategy we model is not the result of an optimization rule; rather, it follows ad hoc rules.

Finally, in order to arrive at gross returns for each plan, we applied estimates of long-term returns for each asset class from a capital market assumptions survey.[44]

Withdrawals are designed to mimic DB plan payouts, at least in the early years of retirement, declining in later years. Work by William Sharpe and colleagues suggests that an optimal approach would integrate investment and withdrawal strategies. Specifically, they find that a constant withdrawal rate must be paired with a riskless investment strategy in order to be optimal for an individual.[45] However, a post-retirement asset allocation entirely concentrated in risk-free assets would dramatically drive up the cost of the DC plan. Thus our model's ad hoc investment and withdrawal strategies would tend to understate the cost advantage of DB plans.

We developed estimates of DC plan costs and expected returns based on a review of existing research. Again, the Center for Retirement Research study cited above found average expenses to be 95 basis points for DC plans.[46] Callan researchers recently found asset-weighted expenses for large institutional mutual funds in DC plans to be 85 basis points; this estimate does not include employer expenses, particularly administrative expenses.[47] The Teachers Retirement System of Texas, which conducted an in-depth retirement benefit design study, estimated total expenses of 47 basis points for its DB plan and 93 basis points for an individually directed DC plan based on plan administrative data.[48]

Although not inclusive of all expenses or exclusive to DC plans, it is worth noting that a Morningstar study reported an average of 91 basis points for TDFs in 2012.[49] Fees range widely for TDFs, and DC funds in general, depending on whether they are actively managed or rely on low-cost index funds. The fund expense ratio for a typical Vanguard TDF is about 16 basis points (not including any load or employer expenses). The typical Fidelity TDF is invested in over two dozen mutual funds, most of them actively managed, and has an expense ratio of about 77 basis points—again, not including employer expenses.[50] A Morningstar survey found that asset-weighted expense ratio for TDFs in 2012 was 91 basis points, down from 1.04 percent in 2008.[51]

We assumed that in an ideal DC plan, the plan sponsor would drive down expenses and that investments would effectively be limited to low-cost TDFs. Thus we assumed only 45 basis points, the same total costs as a DB plan. However, for the individually directed DC plan, we chose an optimistic estimate of 85 basis points for investment and administrative expenses, given that this is the asset-weighted fee average exclusive of employer expenses from the above-cited studies.

We also assumed that participants in an individually directed DC plan would earn lower returns than the DB or ideal DC plan, due to well-documented mistakes related to asset allocation and market timing decisions—for example, investing too much or too little in stocks, and reacting emotionally to market fluctuations by selling assets as prices fall and buying back into the market as prices rise.[52] In addition to behavioral finance studies, key studies indicate that individual investor returns lag behind market returns. This is not a significant problem for pension funds because they are managed by professionals who exercise discipline in the face of market fluctuations. However, investor-level data shows that individuals earn returns significantly below the returns posted by the funds in which they invest.[53]

Estimates of this gap vary depending on the market cycles captured in the time frame, but most studies that cover a long time frame show significant under-performance by individual investors. For instance, a Morningstar study found that investors lagged mutual fund returns by .95 percentage points in the 10 years ended 2012, and 2.49 percentage points in the 10 years ended 2013. The study also examined net flows in and out of each asset class, and found that funds tended to flow out before prices rose, and to flow in before prices fell.[54]

We optimistically assume a modest behavioral drag effect of 60 basis points for the individually directed DC plan, although a significantly larger effect is justified by the data cited above. Combined with higher fees, this means a lag of 100 basis points, or 1.00 percentage point, for net investment returns for the individually DC plan compared to the DB plan and ideal DC plan. This differential is assumed to persist from working years through retirement, so the return disadvantage compounds on top of the gradual shift in portfolio allocation. (We calculate the impact of each effect separately to avoid double counting.)

Our model does not include important additional differences between DB and DC plans, such as the "leakage" of assets from DC plans through loans or early withdrawals, two features which are rare in DB plans. Nor does it analyze the effects of ups and downs in financial markets and the impact that these have on investment returns and costs in both DB and DC plans over a career. Also, the fact that in DC plans some individuals will have "better luck" with investing than others means that individuals' retirement prospects will exhibit a wider dispersion than what is predicted by our model. The 2012 Texas TRS plan design study, for instance, estimated that participants in an individually directed DC plan would have a 66 percent chance of having less than 62 percent of the benefit offered by the DB plan with the same contributions.[55]

Sensitivity Analyses

Impact of Expense and Fee Differential

The analysis above assumed that due to the combined effect of higher expenses and drag on investment returns resulting from typical investor behavior, an individually directed DC plan would have a 100 basis point (1.00 percent) disadvantage compared to both the ideal DC plan and the DB plan. As discussed above, studies of individual investor level returns seem to indicate a higher differential, while some sources may assert a differential in overall net returns of less than 1.00 percent. Consequently, we have expanded our analysis to consider the impact of higher and lower disparities of 0.50, 1.25, and 1.50 percent. The findings are summarized in **Table A2**.

Table A2. **Impact of Different Expense and Behavioral Drag on Plan Funding Requirements**

Combined Excess Fees and Behavioral Drag	Plan	Target Balance at Retirement	Required Contribution (Percent of Payroll)
None	DB	$504,732	16.3%
None	Ideal DC	698,640	23.0%
1.00%	Individually Directed DC	803,236	31.3%
Alternate Scenarios			
0.50%	Individually Directed DC	748,137	26.8%
1.25%	Individually Directed DC	833,121	33.8%
1.50%	Individually Directed DC	864,702	36.6%

Impact of Lower- or Higher-than-Expected Returns

The analysis has assumed that each year's annual investment return is exactly that which is expected. In practice, returns will not be that stable, particularly in the years when significant assets are invested in equities. While the long-run returns are expected to average out to those assumed, there is a possibility that they would fall short. For a typical DB plan with a typical asset allocation, which is expected to return approximately 7.5 percent over thirty years, there is about a 25 percent probability that returns will fall below 6.0 percent and about a 25 percent probability that returns will exceed 9.0 percent. DC plans would have a similar deviation when invested significantly in equities. Once the individual retires and trims equity exposure, volatility declines.

The ramifications of higher or lower returns are complex. Let us analyze the event where returns from age 30 to 45 are as expected, but returns from 45 to 75 are either 1.5 percent higher or 1.5 percent lower than expected.

Under a DB plan, if returns average 6 percent for this period of thirty years, there would be a shortfall of $120,000 per retiree at age 75. This would create an unfunded liability which would require additional contributions. In practice, the DB plan would begin to fund for this unfunded liability shortly after it began at age 45. Using traditional actuarial funding methods, contributions would grow from 16.3 percent of pay from ages 30 to 45 up to 29 percent at age 62 and continue at this level beyond age 62.

On the other hand, if returns average 9 percent for this period of thirty years under a DB plan, there would be a surplus at age 75. This would result in reduced contributions. In practice, the DB plan would begin to reduce contributions shortly after the surplus begins at age 45. Using traditional actuarial funding methods, contributions would drop from 16.3 percent of pay from ages 30 to 45 to zero at age 62 and actually generate an offset to future contributions beyond age 62.

If returns are 1.5 percentage point lower than expected under a DC program, then four possible outcomes can occur. First, the individual could work longer to try to accommodate the target retirement benefit levels. Second, the individual can taper back their withdrawals during retirement, resulting in reduced income. Third, the individual can run out of money and hope for another source of income. Fourth, the individual can also change their asset allocation in hope of high returns which would help catch up for the shortfall, but we do not model this option because it is essentially a gamble with very different possible outcomes.

Table A3. **Comparison of Retirement Income Generated by a Fixed Contribution Rate**

Plan	Balance at Retirement	Monthly Benefit as Percentage of Final Pay
DB	$504,732	53%
Ideal DC	$496,902	38%
Individually Directed DC	$419,579	28%

In the individually directed DC case, an individual who had 1.5 percentage point inferior return beginning at age 45 would find at age 62 that they are short of their $800,000 needs by approximately $140,000. In order to meet their retirement needs, they would need to continue working to age 66. But unbeknownst to them, they still have nine years ahead of them of inferior returns. They could also merely reduce their annual withdrawals by 17 percent. The other extreme is that they simply keep their fingers crossed, but if returns continue as outlined above, they would run out of retirement funds at age 86 rather than age 97 as targeted. This means that instead of only a 20 percent likelihood of outliving their savings, there is a 63 percent likelihood.

If returns are superior by 1.5 percent under the individually directed DC plan, then the alternatives are much more palatable. The individuals can begin to reduce savings amounts, can retire earlier, can pay themselves a higher monthly retirement benefit, or can leave more to their heirs. This analysis will not address these fortunate alternatives.

Benefit Comparison with Constant Contributions

Our analysis has assumed that employers are targeting an acceptable level of retirement income, then solving to determine the contributions necessary to produce such an income level. This illustrated that a DB plan can produce a given level of benefits at a 48 percent cost reduction from individually directed DC plans. (This is an important consideration, given that discussions of retirement benefit targets are often absent from discussions of DB and DC plan costs.) But in the real world, employers rarely implement a DC plan and increase contributions. A more germane analysis would look at the reduced level of benefits that would result from switching from a DB pension to a DC plan while maintaining the same contribution rate. As **Table A3** shows, a fixed contribution rate of 16.3 percent of pay generates substantially lower retirement benefits in the ideal DC plan and the individually directed DC plan, compared to the DB plan.

Benefit Cost Comparison for Male Public Safety Workers

One workforce segment which very often is covered by DB plans is public safety. Police officers and firefighters throughout the US tend to have DB coverage, either through a statewide pension plan or a local plan. These workers generally retire from service at younger ages than other workers and are usually not covered by Social Security, and thus have higher benefit multipliers. As another test of the DB plan efficiency, we modelled a male firefighter retiring at age 55 after 25 years of service. This firefighter was assumed to have final earnings of $80,000 and a benefit of 2.5 percent of pay per year of service.

Our findings for male public safety workers, shown in **Table A4**, are very similar to those for female schoolteachers discussed above. The DB plan is 27 percent less expensive than the ideal DC plan and 46 percent less expensive than the individually directed DC plan.

Table A4. **Comparison of DB vs. DC Plan Costs for Teachers and Firefighters**

Model Parameters and Results	**Teacher**	**Firefighter**
Gender	Female	Male
Hire Age	30	30
Retirement Age	62	55
Service at Retirement	30 (excl. two year break)	25
Salary at Retirement	$60,000	$80,000
Benefit Multiplier	1.85% per year	2.50% per year
Covered by Social Security	Yes	No
Initial Monthly Benefit at Retirement	$2,670	$4,008
Median Life Expectancy at Retirement	90	87
80th Percentile Life Expectancy at Retirement	97	94
Balance Required at Retirement – DB Plan	$504,732	$810,930
Annual Contribution Required (as a Percentage of Payroll) – DB Plan	16.3%	26.1%
Balance Required at Retirement – Ideal DC Plan	$698,640	$1,132,456
Annual Contribution Required (as a Percentage of Payroll) – Ideal DC Plan	23.0%	35.9%
Balance Required at Retirement – Individually Directed DC Plan	$803,236	$1,326,386
Annual Contribution Required (as a Percentage of Payroll) – Individually Directed DC Account	31.3%	48.1%
DB Cost Savings as a Percentage of Ideal DC cost	29%	27%
DB Cost Savings as a Percentage of Individually Directed DC cost	48%	46%

ENDNOTES

1 B. Almeida and W.B. Fornia, 2008, "A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pension Plans," National Institute on Retirement Security, Washington, DC.

2 The benefit factor could also be a function of a worker's earnings over their entire career (a so-called "career average plan.") Or, the factor could be a flat dollar amount: for example, the plan will pay a monthly benefit equal to $50 per year of service, so that a 30 year employee would have a benefit of $1,500 per month. "Flat dollar" plans are primarily seen among blue-collar workers in the private sector.

3 Inflation protection varies among DB pensions. Private DB pensions typically do not offer Cost of Living Adjustments, while public DB pensions usually offer some level of inflation protection.

4 R. Jung and N. Rhee, 2013, "How Do Public Pensions Invest? A Primer," National Institute on Retirement Security, Washington, DC.

5 While not incorporated into our model, the lack of sufficient contributions can be a problem for DB plans and is a widespread problem for voluntary DC accounts. The median 401(k) contribution rate among participating workers peaked at 5.2 percent in the early 2000s, and stood at just 5 percent in 2010. (See Table 6, p. 44 in B.A. Butrica and K.E. Smith, 2012, "401(k) Participant Behavior in a Volatile Economy," CRR WP 12-24, Center for Retirement Research at Boston College, Chestnut Hill, MA.) In addition, 29 percent of private sector wage and salary employees who have access to a 401(k) type plan do not participate (U.S. Bureau of Labor Statistics (BLS), 2013 National Compensation Survey Employee Benefit Survey, BLS, Washington, DC, http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table02a.htm.)

6 There is a wealth of research on behavioral biases in retirement saving and investing. See for instance S. Benartzi and R. Thaler, 2007, "Heuristics and Biases in Retirement Savings Behavior," *Journal of Economic Perspectives*, v21n3: 81-104. For an accessible overview of research in this field, see S. Benartzi, 2007, "Implications of Participant Behavior for Plan Design," Alliance Berstein.

7 J.C. Chang, S.W. Simon, and G.K. Allen, 2005, "A Step Beyond Erisa Section 404(c): Improving on the Participant Directed 401(k) Investment Model," *Journal of Pension Benefits*, v12n4.

8 C. Copeland, 2007, "How Are New Retirees Doing Financially in Retirement?," EBRI Issue Brief. No. 302, Employee Benefit Research Institute, Washington, DC; D. Love, P.A. Smith and L. McNair, 2007, "Do Households Have Enough Wealth for Retirement?" *Finance and Economics Discussion Series*. 2007-17, Federal Reserve Board, Washington, DC.

9 P. Perun, 2007, "Putting Annuities Back into Savings Plans," In T. Ghilarducci and C. Weller, eds., *Employee Pensions: Policies, Problems, and Possibilities*, Labor and Employment Relations Association, Champaign, IL.

10 Jung and Rhee, 2013, op cit.

11 See N. Rhee, 2013, "Pensionomics 2014: Measuring the Economic Impact of DB Pension Expenditures," National Institute on Retirement Security, Washington, DC, pp. 2-3.

12 See I. Boivie, 2011, "Who Killed the Private Sector DB Plan?," National Institute on Retirement Security, Washington, DC; and A.H. Munnell and M. Soto, 2007, "Why Are Companies Freezing Their Pensions?," WP 2007-22, Center for Retirement Research at Boston College, Chestnut Hill, MA.

13 Jung and Rhee, 2013, op cit.

14 N. Rhee and D. Oakley, 2012, "On the Right Track? Public Pension Reforms in the Wake of the Financial Crisis," National Institute on Retirement Security, Washington, DC; for an analysis of the impact of post-2008 public pension changes, see A.H. Munnell,J.P. Aubry,A. Belbase and J. Hurwitz, 2013, "State and Local Pension Costs: Pre-Crisis, Post-Crisis, and Post-Reform," *State and Local Pensions* #30, Center for Retirement Research at Boston College, Chestnut Hill, MA.

15 National Association of State Retirement Administrators (NASRA), 2011 (Oct.), "Public Pension Plan Investment Returns," *NASRA Issue Brief*, NASRA, Washington, DC; NASRA, 2014 (Apr.), "Public Plan Investment Assumptions," NASRA Issue Brief, NASRA, Washington, DC.

16 A GAO study found that "some sponsors faced challenges in understanding the fees they and their participants were charged." U.S. Government Accountability Office, 2012, "Increased Educational Outreach and Broader Oversight May Help Reduce Plan Fees," GAO-12-345, GAO, Washington, DC, n.p.

17 Investment Company Institute, 2014 (Jul.), "The Economics of Providing 401(k) Plans: Services, Fees, and Expenses, 2013," *ICI Research Perspective*, v20n4.

18 Department of Labor regulations released in 2007 (29 CFR Part 2550) eased the way for employers to assign TDFs as default investment vehicles in participant-directed DC plans.

19 J. VanDerhei, S. Holden, L. Alonso, and S. Bass, 2013, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2012," Issue Brief No. 394, Employee Benefit Research Institute, Washington, DC.

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Issue Brief

Teacher Retirement Plans: Case Studies in Washington and Ohio Indicate Value of Pensions

By Diane Oakley and Ilana Boivie

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EXECUTIVE SUMMARY

For more than a century, public retirement systems have provided financial security to current and future retired teachers, while also enabling public schools to manage their educational workforce. However, in recent years, a few states have moved to new benefit design structures for K-12 teachers, including providing teachers a choice between a traditional defined benefit (DB) pension design and alternative designs, such as a defined contribution (DC) plan, or a "hybrid" DB-DC combination design, which includes both DB and DC benefits.

In offering teachers a choice between retirement plans, public policy considerations include state budget concerns, the financial health of the pension fund, and the distribution of risk between the state and employees. In terms of teacher pensions, effects on education quality should also be considered, for example, the retirement plan's effect on recruitment and retention of quality teachers to foster a highly effective teaching workforce.

In 1997, Washington State started covering all teachers in a DB-DC combination plan with a choice to move to that plan from the DB pension available to those teaching in 1997. More recently, the state legislature changed the law to reopen membership in the traditional DB pension for all new teachers hired since 2007 to allow them to choose between the two plans. Several papers on the Washington State experience have reached somewhat different conclusions on the value and implications of the choice option for teachers in that state. This paper delves deeper into the unique experience in Washington, as well as the teacher choice experience in Ohio, and finds that:

1. **The experience of teacher election patterns in Washington State is unique, in that the combined DB-DC plan included special features and timing patterns which encouraged participation. Specifically:**
   - Teachers were provided upfront financial payments to switch to the DB-DC combined plan.
   - The bull stock market of the 1990s may have caused teachers to overestimate how much money they would be likely to accumulate in their DC account, thereby making the combined plan seem more generous.
   - The state offers in-plan annuitization of the DC account balance, which provides teachers with a much larger lifetime income stream than if they were to buy an annuity from an insurance company, but also shifts longevity risk back to the state.
2. **Ohio, the only other state that offers teachers a choice between a DB plan and a combined DB-DC plan, does not provide such incentives in the combined plan, and has experienced very different election results. Between 2002-2014, 86 percent of teachers have opted for the traditional DB plan, versus just four percent who opt for the combined plan.**
3. **Education policy research finds that traditional DB pensions play a critical role in recruiting and retaining productive teachers. Therefore, offering an alternative retirement design could have adverse effects on teacher quality.**

Evidence from these two states suggests that teachers are unlikely to choose an alternative retirement plan design unless the state undertakes significant risk in the individual account portion of the plan. Furthermore, because research suggests that offering a choice could have adverse effects on teacher retention and quality, policymakers should proceed with caution before implementing a choice between a DB pension and a combined DB-DC plan.

INTRODUCTION

For over a century, public retirement systems have provided financial security to current and future retired K-12 teachers, while also enabling public schools to manage their educational workforce.

However, the financial crisis of 2008-2009 caused underfunding in most retirement plans, and teacher pensions were no exception. In response, every state legislature has put in place major changes to public pension systems to keep teacher defined benefit (DB) pension plans on a strong and solid financial footing.[1] In enacting legislation to change public retirement systems during the last five years, state policymakers generally have understood that moving toward a defined contribution (DC) retirement savings plan does nothing to address funding shortfalls.[3]

However, in recent years, a few states have moved to new benefit design structures for teachers, including providing teachers a choice between a traditional DB pension design and alternative designs, such as a defined contribution (DC) plan, or a "hybrid" DB-DC combination design, which includes both DB and DC benefits.

This issue brief examines the decisions of teachers in two states when teachers have the opportunity to choose between different types of retirement plans. First, we examine the circumstances that likely influenced pension choice in Washington State, in which teachers were given a one-time election in 1997 to move from a DB pension to a DB-DC combination plan. Dan Goldhaber and Cyrus Grout of the Center for Education Data and Research (CEDR) at the University of Washington have published several case studies on the experience in Washington, with somewhat conflicting conclusions. We augment their analysis by considering the stock market performance at that time and a one-time financial payment that acted as an incentive to encourage teachers to switch in 1997. In addition, we highlight the ways in which the DC portion of the combination plan in Washington is designed to mitigate the risks that employees typically face in DC plans, ultimately shifting much of that risk back to the state.

Next, we take a closer look at pension choices offered to new teachers on an ongoing basis and their decisions, comparing the experience in Washington with that of Ohio, another state that offers teachers a choice between a DB pension and a DB-DC combination plan. Finally, we address the question of teacher efficacy and plan choice in the context of research on the workforce implications of pension plan design.

AN OVERVIEW OF THE WASHINGTON STATE TEACHERS RETIREMENT SYSTEM

Like many states, Washington first established the State Teachers Retirement System (TRS) around the time of the Great Depression in 1938. The early TRS pension was modified in 1977, and a revised pension—TRS2—provided retirement income based only on a DB formula for teachers hired after 1977. TRS2 benefits were somewhat lower than earlier ones, because the normal retirement age was older, the final salary used in benefit calculations was lowered by using a longer period, and cost of living adjustments were capped at three percent a year. Both the employer and employees contributed to TRS2.[3]

Teachers who leave before retirement can receive a delayed vested pension or choose a refund of their TRS2 contributions, compounded with a 5.5 percent annual guaranteed interest rate on those funds. During 1980-2000, the bull stock market generated impressive double-digit investment returns through a technology stock bubble that filtered through the broad stock market. This bullish environment framed employees' investment outlooks in the late 1990s. Additionally, as the home of Microsoft, Washington State saw many residents become "millionaires" during the technology bubble, as workers cashed in their stock options. Perhaps not surprisingly, employees leaving TRS2 during this time felt that the 5.5 percent guaranteed interest rate did not represent a good return.[4]

Responding to a desire of some employees for more retirement plan flexibility, legislation passed in 1995 (HB 1206) put all newly hired Washington teachers into a DB-DC combination retirement plan, TRS3, consisting of a DB component with a lower benefit and a DC component. The new DB formula offered only half of the benefit level in TRS2. All contributions from employees were put in individual DC accounts, with investments directed by the teachers themselves.[5] In 1997, teachers in the TRS2 plan were given an opportunity to opt out of their existing plan and into the new TRS3 plan.

The Washington Department of Retirement Services (DRS) and the Washington State Investment Board (WSIB) designed TRS3 in a manner that incorporated into its DC accounts many important features and cost efficiencies typically found in the TRS pension component, like professional money management and longevity protection.

RESEARCH ON WASHINGTON STATE TEACHERS

One of the most recent policy changes to TRS occurred in July 2007, when TRS2 was reopened as a plan choice for all newly hired K-12 teachers. The State Supreme Court recently upheld the law (HB 2391[6]) that made this change.[7]

Thus, there are two groups that have been offered a choice between TRS2 and TRS3. The first group, called the 1997 Cohort, consists of teachers who were allowed in 1997 to switch out of TRS2 and into TRS3. Those who switched received a reduced DB pension, funded solely by the state, and teachers switching plans would direct the investment of their individual DC accounts.

The second group is the growing population of teachers hired since July 2007—the 2007 Cohort. These newly hired teachers have a 90-day period to elect to participate in either TRS2 or TRS3. If a newly hired teacher fails to make an election, he or she defaults into TRS3, and five percent of salary is withheld and deposited into an age-appropriate target date fund offered under the DC component of TRS3. Since 2008, the majority of the teachers making an "active election" about their retirement plan have chosen to participate in TRS2.

Goldhaber and Grout recently published the paper "Finding a Common Ground in Pension Reform," a project of Bellwether Education Partners. The authors offer two implications on these two specific cohorts. First, they suggest that the overall popularity of the DB-DC combination approach among teachers in Washington might indicate that pension revisions involving such hybrids approaches could be attractive to teachers in other states. Specifically cited are the 75 percent of the 1997 Cohort who choose to transfer from TRS2, and the 60 percent of new teachers in the 2007 Cohort who the authors report as participating in TRS3 either by choice or default.[8] Secondly, the authors' observations indicate unlikelihood that the "introduction of TRS3 had negatively altered the composition of the teacher workforce by making teaching less desirable" to effective teachers.[9]

Curiously, these conclusions contrast with the conclusions of an earlier working paper on the Washington experience, published by CEDR, entitled "The Choice is Yours: How Pension System Decisions Might Shape the Teacher Workforce." In that paper, Goldhaber and Grout suggested limits on inferring widely from these two specific situations in Washington:

> While these findings cannot be generalized to hybrid plans as a whole (we only observe choice between two specific plans), they do indicate the potential to induce a large proportion of transfers to a suitably structured plan.[10]

Indeed, there were several unique characteristics offered by Washington State that may have incentivized teachers to make the switch. These characteristics are not only unusual, but also transfer risk and potential costs back to the state.

THREE INFLUENCES OF UNOBSERVED TEACHER EXPECTATIONS IN 1997

1. Upfront Financial Payment to Those Who Switched to TRS3

The 1995 law permitted teachers already covered by TRS2 to make a one-time switch to TRS3. The law offered an actuarially equivalent adjustment to the "value" of employee contribution accounts, which some considered a financial incentive for the existing TRS2 members to switch to TRS3. Ultimately, those teachers who elected to switch to TRS3 received the value of their employee contribution account, compounded with a 5.5 percent interest rate, as well as an additional amount equal to 65 percent of their account value.

A public announcement, made on November 20, 1997, contained the subject line "Increase in Bonus for Switching from TRS2 to TRS3." This highlighted the additional value that was being offered, to great effect; the majority of the 1997 Cohort who elected to switch to TRS3 did so after this notice was distributed.[11]

The additional incentive payment was substantial. Goldhaber and others estimate that the additional amount transferred to the TRS3 DC account for a teacher with five years of experience was about $9,800. For a teacher with 15 years of experience, it was approximately $43,000.[12] DRS transferred about $200 million dollars from the TRS2 plan's well-funded trust fund in 1997.[13]

In total, these actuarial adjustment payments appeared to have encouraged teachers to switch to TRS3. At the time that the incentivized switch option closed down, 18,535 eligible teachers had chosen to switch to the DB-DC combination plan. Since the expiration of the bonus payment after the initial 1998 election, fewer than 350 teachers in the 1997 cohort still covered by TRS2 have elected to move to TRS3.[14] This suggests that the upfront incentive was important to those teachers making the election.

It is worth noting that such a one-time lump sum transfer payment is not only unusual, but also highly unlikely to be replicated, given the current financial status of public pension plans nationwide. Many public pension plans continue to recover from losses caused by the financial crisis and are at funding levels below 100 percent, and therefore are not in a financial position to offer incentive payments, because they would increase plan costs. Transferring funds out of an underfunded public pension would make the funding of existing benefits more challenging, and contrary to the intent of recent plan changes enacted to put public pension funds on a more secure financial footing.

2. Stock Market Return Expectations

Just as the pension funding landscape changed markedly between the late 1990s and post-2008, so too have individual investors' expectations about stock market returns. In fact, even Goldhaber and Grout concede that the context surrounding the teachers' choices between TRS2 and TRS3 in 1997—specifically, "unobserved expectations"—may have played a part in teacher choice:

> It is likely that unobserved expectations related to tenure and investment returns, and *unobserved attitudes towards investment choice and risk are driving a substantial proportion of the pension decision.* Furthermore, these unobserved expectations and attitudes do not appear to be highly correlated with teacher and workplace characteristics we are able to control for in our models.[15]

The authors acknowledge in earlier papers that: "the bull market in the mid 1990s may have positively influenced expectations about future investment returns" and the subsequent retirement plan elections of teachers.[16] Despite acknowledging that the study does not account for this influence, the Bellwether paper states: "a well-designed hybrid plan can create an environment under which teachers value the deferred compensation." In fact, the bigger question may be whether its introduction can be timed to financial markets.

Thus, an understanding of the general investor mentality in 1997 is relevant. Patterns over 20 years of strong growth

delivered by equity investments represented by the S&P 500 Index should be part of a consideration of the predictive power of the 1997 Cohort's elections. Clearly, the strong technology-driven investment returns in the 1990s provided pressure leading to the creation of the TRS3 plan.[17] Over the 20 years through the end of 1997, an investment fund based on the S&P 500 Index had annual one-year returns including dividends that ranged from a high of 37.58 percent to a low of -4.95 percent. In nine of those 20 years, the Fund had one-year gains in excess of a 20.0 percent. During the 20-year period ending in 1997, the S&P 500 Index Fund delivered five consecutive 15-year annualized returns in which the gains exceed 14 percent. [18]

In the description of TRS3, the DRS Plan Choice Booklet carefully cautions: "The amount of your benefit depends on the amount you contribute and the performance of your investments."[19] Additionally, each of the TRS3 fund information sheets provided by Morningstar includes a similar caution:

> The performance data given represents past performance and should not be considered indicative of future results. Principal value and investment returns will fluctuate, so that an investor's shares when redeemed may be worth more or less than the original investment. Fund portfolio statistics change over time.[20]

Did teachers incorporate such cautions and temper their investment expectations as they reviewed and compared projected benefit values from TRS2 and TRS3 when they made their decisions? We have no data to answer this specific question.

In hindsight, anticipating only modest investment results would have been prudent. The subsequent 16 years of equity returns since 1998, again represented in S&P 500 Index, turned out to be very different than what teachers might have expected based on investment returns prior to 1998. Over the 16 years since 1997, the S&P 500 Index had annual one-year returns that ranged from a +32.39 percent high in 2013 to a -37.00 percent low in 2008. In the two observable 15-year periods since 1997, annualized 15-year returns of the S&P 500 Index show modest gains of 4.47 and 4.68 percent,[21] both of which fall below the current guaranteed rate used by DRS when refunding employee contributions to TRS2 participants who leave the system.

Policymakers in other states contemplating offering a choice option should consider the experience in Washington, which suggests that the dynamics of the financial markets at the time that choice is offered can have a considerable effect on participants' decisions.

3. Value of Purchasing Lifetime Retirement Income through DRS

Generally, those considering DB pension reform acknowledge that "moving towards a DC-type plan does nothing, by itself to address *existing* shortfalls"[22] in existing retirement systems. In Washington State, the DB component of TRS3 has a benefit formula generally equal to half of the benefit payable in TRS2. Thus, the authors of the Bellwether report suggest that the state's long-term financial risk associated with TRS3 is lower than TRS2, perhaps by as much as half of the risk associated with TRS2, because its DB benefit is half of the value of the TRS2.[23] Of course, financial risk does not disappear in moving from a DB to a combined DB-DC design; rather it is shifted onto employees.

However, the current structure of TRS3's DC component somewhat reduces teachers' income replacement risk in two ways. First, in addition to offering diversified indexed mutual funds and target date funds, TRS3 allows participants to have their contributions managed by WSIB during both working years as one of the investment options and retirement years by using DC account accumulation to buy retirement income from WSIB. Research shows that professional asset management enables funds to achieve higher investment returns than individual investors can achieve on their own. Over time, superior returns can go a long way. Just a one percent annual difference in returns can translate to a retirement benefit that is 26 percent higher over the course of a career.[24]

Second, all teachers in TRS3 have the opportunity to receive monthly income payments from the system through a one-time transfer of DC account funds to WSIB. Purchasing lifetime retirement income from WSIB provides important longevity protection to employees, and maintains a key cost efficiency available under the DB pension component. A DB pension targets its funding requirement to cover the average participant's life expectancy because it is able to predict this with relative accuracy, given a large participant population. In a DC plan, on the other hand, each individual must "oversave" to assure that he or she does not run out of money over 20,

30, or more possible years in retirement.[25] Put differently, if an individual saved to just provide adequate income for the average life expectancy—the way a DB plan is able to do—then that person would have a 50 percent chance of outliving his or her retirement income. Thus, in offering the annuitization option, TRS is essentially re-assuming the teachers' DC longevity risk priced at the time of retirement. At the same time, this feature delivers significantly more retirement income to teachers than they can obtain from purchasing annuity income from an insurance company.

For teachers to mitigate longevity risk individually, they would have to purchase an annuity product through an insurance company, which would be much more costly. This is largely why, according to the U.S. Government Accountability Office (GAO), financial experts recommend that retirees receive an annuity benefit from a DB plan if that option is available.[26] Recommendations on buying annuities from insurance companies are mixed and, in fact, the GAO reports that only six percent of retirees choose to buy annuities with their DC account assets. The GAO found:

> … for retirees who want guaranteed income, experts we spoke to considered lifetime retirement income from DB plans preferable over purchasing an annuity with a lump sum distribution, since DB plans may be able to provide payments at a higher rate than is available through an insurance annuity outside of the plan.[27]

This is the case in Washington State. WSIB provides an online calculator[28] to help teachers determine the amount of initial and future annual income that will be provided for a given amount of dollars transferred from TRS3 DC accounts. Our analysis shows that WSIB's annuity option offers all retiring teachers, including those with TRS3 DC accounts, lifetime annuity protection at very attractive rates.

For example, Table 1 illustrates that a teacher who had $100,000 in his or her DC account at age 65 could purchase an initial Single Life Annuity benefit that would pay him or her a monthly income of $625 ($7,502 annually) from WSIB.[29] This benefit would increase by three percent each year in order to account for inflation, or a three percent COLA. This flexibility provides retiring teachers significant additional guaranteed income that will increase each year in retirement.

If the teacher instead chooses to purchase a similar Single Life Annuity with a three percent COLA from an insurance company, then the monthly benefit payable would be much lower. Again looking at the same $100,000 DC account balance and using specific annuity purchase rates for the best-priced annuity published in the "Annuity Shopper," an insurance company would pay a retiring male teacher $430 each month (or $5,160 annually).[30] Because insurance companies are allowed to factor the longer expected lifetimes of female teachers into their pricing structures, the monthly annuity benefit paid to a retiring female teacher would be still lower—she would receive initial monthly annuity checks of only $409 ($4,908 annually).[31] In this best-value annuity, the female teacher would get nearly $2,600 a year less than she would receive from WSIB. To get the same $625 monthly WSIB amount from an insurance company, a female teacher would have to have saved between 52-87 percent more than the $100,000 accumulated in the DC account, depending on the company selected.[32]

Table 1: Monthly Lifetime Retirement Income from $100,000 of DC Account Assets Payable as a Single Life Annuity that Increases by 3 Percent Each Year

	Option Under TRS3 To Buy Annuity From Washington SIB	Purchase Annuity From Insurance Company At Best Rate In *Annuity Shopper*	Difference in Monthly Income
Male	$625	$430	$195
Female	$625	$409	$216

Source: Author's calculations

This flexibility to purchase an annuity from WSIB helps teachers retire with greater assurance, because the state retirement system is able to pool the risk of outliving the assets in teachers' DC accounts. However, in offering the annuitization option, the DB plan is essentially re-assuming the teachers' DC longevity risk. Thus, this design feature limits the 50 percent risk reduction advantage for the employer that Goldhaber and Grout assert in the Bellwether paper.[33]

TEACHERS MAY HAVE OVERESTIMATED THEIR TRS3 RETIREMENT BENEFITS BY USING OVERLY OPTIMISTIC ASSUMPTIONS

The decision to choose between participating in a DB pension or in a DB-DC combination retirement plan likely will include the teachers' perceptions of the relative retirement security that each plan design offers. Workers' perceptions of job tenure and, in the case of DC accounts, perceptions of future rates of return on investments, can measurably impact their decisions. Also, the timing of macroeconomic events such as the bull markets of the late 1990s or the financial crisis of 2008 can shape individual perceptions of the future and thereby impact retirement plan decisions. Employees' understanding of complex financial issues also plays a part, as teachers need to understand risk diversification and interest compounding, which are relatively advanced financial literacy topics.

In DB pensions, teachers have a straightforward way to estimate their replacement retirement income after a career of teaching, by using the DB formula. For example, Washington teachers who participate in the TRS2 plan for 40 years would replace 80 percent of final average salary, based on the TRS2 formula of two percent for each year of service. For teachers in TRS3, estimating their replacement income is a far more complex proposition. After 40 years of teaching, a teacher can anticipate replacing 40 percent of final average salary from the DB component. However, to estimate how much income teachers' DC accounts will replace relies on accurate and reasonable assumptions about salary growth, inflation, and investment returns covering periods up to 40 years.

To help with such choices, most DC plans provide general illustrations in printed booklets, while computers can enable employees to develop personalized retirement benefit estimates. Teachers in the 1997 Cohort were able to use diskettes and could plug in investment return assumptions of 6, 8, 10, or 12 percent when making benefit estimates.[34] Based on the historical returns from the bull market at the time the 1997 Cohort made its elections, teachers might have viewed a 10 percent rate of return as a moderate assumption. Salary was assumed to grow at a nominal rate of three percent, which was the same as the assumed inflation rate.[35] Thus, the benefit projection software used "spreads" between salary growth and assumed investment rates of return that equaled 3, 5, 7, and 9 percent in those calculations.

In contrast, and in line with practices of well-funded public pensions,[36] the Washington Office of the State Actuary uses a lower, more realistic spread between the actuarial-modeled expected growth in teacher salaries and expected investment returns. The Washington State TRS plan's valuations to establish the actuarially required contribution needed to fund its pension obligations reflects roughly a four percent spread between the salary growth assumption and the assumed investment rate of return earned on plan assets.[37]

Investment return assumptions can significantly affect the value of the projected retirement benefit, and therefore can greatly affect the choices that teachers make between TRS2 and TRS3. For example, using a higher investment return assumption such as 10 percent generally produces illustrations that would favor choosing the DB-DC combination option, while narrower spreads between assumed factors produce more balanced projections.

Table 2: Wealth-to-Earnings Ratio at Retirement from 1% Annual Savings

Years of Saving	r = 0.04	r = 0.03	r = 0.02	r = 0.01
20	0.28	0.26	0.22	0.20
30	0.49	0.41	0.35	0.30
40	0.77	0.61	0.49	0.40

Source: Poterba, J. Retirement Security in an Aging Society, NBER

Table 2, published by MIT economist James Poterba, illustrates the impact that increased assumed real investment earnings rates exert on estimated wealth-to-earnings replacement ratios using modest interest rates over several career-length time periods. For example, over a 40-year career, a four percent real rate of return generates a projected wealth-to-earnings replacement ratio of 0.77, while a two percent assumed return produces a ratio of just 0.49—a difference of more than 50 percent.[38]

Poterba does not provide illustrations of the impact of using wider spread in assumptions that show the increasing exponential impact of assuming wider spreads between salary growth and investment return. The Segal Company has estimated benefit replacement ratios for teachers who start teaching at age 25 with an initial salary of $24,000 and retire forty years later at age 65. Table 3 illustrates several projected benefit replacement outcomes, assuming that teachers contribute five percent of salary to their DC accounts (the TRS3 default contribution), under various combinations of assumed salary growth and investment returns.

If inflation is anticipated to increase at three percent each year, the last illustration in Table 3 reflects a one percent real salary growth rate paired with a nine percent real (12 percent nominal) investment return assumption. This pairing of assumptions delivers a projected income replacement benefit of over 100 percent, based only on what would be the employees default contribution of five percent of salary in Washington's TRS3 plan. This almost seems to be an extraordinarily generous retirement benefit—but at the same time, the likelihood of all of those assumptions prevailing over a 40-year period is quite small.

Thus, appreciating the potential distortion imbedded in extreme spreads between investment growth and salary growth requires a sophisticated level of financial literacy. Yet, recently, Scheresberg, Lusardi and Yakoboski found that only 12 percent of women displayed high financial literacy when answering questions in the National Financial Capability Study. While college-educated women (a group that would include most teachers) scored higher than women with no college degree, still less than one in five college-educated women answered all of the more complex questions correctly, and less than half answered the three questions measuring basic financial literacy correctly.[39] Thus, it would appear unwise to expect teachers to fully grasp the nature of the interrelated financial assumptions on projected retirement benefits.

It is important to note that in their analysis of the 1997 Cohort's decisions, Goldhaber and Grout indicate that the transfer decision was influenced by financial incentives and factors related to risk preferences such as age and income levels; however, they also indicate that the influence of estimated financial value was modest.[40] This seems in contrast to the analyses conducted by Poterba and Segal.

In summary, while investment disclosures warn that historical returns do not predict future earnings, workers' perceptions are often influenced by such expectations, without regard to accuracy.[41] We do not have observations about the values teachers may have plugged into the modeling software to know if they used more conservative assumptions than the late 1990s bull stock market might predict.[42] Nevertheless, as had been demonstrated, it is important to provide employees adequate financial information, so they can understand the relative values and reliability of benefit estimates when making retirement plan choices.

Table 3: Income Replacement Based on 40 Years of Employee Contributions Equal to 5% of Salaryto TRS3 DC Accounts

Salary Growth	Investment Rate of Return	Spread	Final Salary	DC Accumulation	Replacement Ratio
3.5%	7.5%	4.0	$95,022	$475,892	40%
0.0%	6.0%	6.0	$24,000	$203,912	69%
1.0%	9.0%	8.0	$35,733	$512,602	115%

Source: Segal calculations of annuity income based on the RP 2000 generational male mortality with 4.50% interest

RETIREMENT PLAN ELECTIONS OF NEW PUBLIC SCHOOL TEACHERS

Due to the importance of investment returns on the account values in DC retirement plans, preferences between DB pensions and combined DB-DC plans can change with fluctuations in investment markets and levels of employee confidence.

Gardner and Nyce have demonstrated that the attraction and retention effect of DB pensions has grown since the 2008 financial crisis, especially among employees under age 40. In 2013, 39 percent of DB participants under 40 reported that their retirement plan was an important reason they decide to work for their current employer, while only 22 percent of the DC participants cite their DC plan as an important reason. When it came to employee retention, the power of the DB plan was even stronger. Fifty eight percent of DB participants under age 40 reported that their retirement plan was an important reason they stay with their current employer, as compared with just 33 percent of similar DC participants.[43]

In Washington, newly hired teachers must make a positive election to be covered by TRS2. Teachers making an active choice, as opposed to a default, have consistently preferred TRS2 to TRS3 since 2008. Moreover, new teachers hired in Washington State have steadily shifted towards a preference for TRS2 over time. Table 4 illustrates the choices made between TRS2 and TRS3 in each year between 2007 and 2013, as well as the cumulative plan choices over the periods. The share of newly hired teachers actively electing TRS2 increased from 39 percent in 2007, before the financial crisis, to 55 percent in 2013.[44] This trend further supports the earlier discussion that retirement plan elections are sensitive to financial market performance.

In "Decisions, Decisions: Retirement Plan Choice for Public Employees and Employers," NIRS examined the handful of states that offer public employees an alternative choice to participating in the DB retirement plan. In all states that

Table 4: Washington State TRS 2/TRS 3 Choice and Default Counts by Year

Year	TRS 2	TRS 3	TRS 3	TRS 3 Total	TRS 2	TRS 3	TRS 3	
	Choice	Choice	Default		Choice	Choice	Default	TRS 2/3
2007	1,384	1,628	566	2,194	39%	46%	16%	100%
2008	1,558	1,353	792	2,145	42%	37%	21%	100%
2009	889	657	420	1,077	45%	33%	21%	100%
2010	1,444	898	696	1,594	48%	30%	23%	100%
2011	1,302	802	602	1,404	48%	30%	22%	100%
2012	1,774	1,100	724	1,824	49%	31%	20%	100%
2013	1,374	923	189	1,112	55%	37%	8%	100%
Total	9,725	7,361	3,989	11,350	46%	35%	19%	100%

Source: Washington Education Association analysis of Washington DRS enrollment data.

offer a choice, public employees overwhelmingly choose to enroll in the DB pension. In 2010, public employee elections to participate in a DC plan ranged from a low of two percent in North Dakota to a high of 25 percent in Florida. These election patterns have remained within that range over the period covering 2003 to 2011, as illustrated in Figure 1.[45]

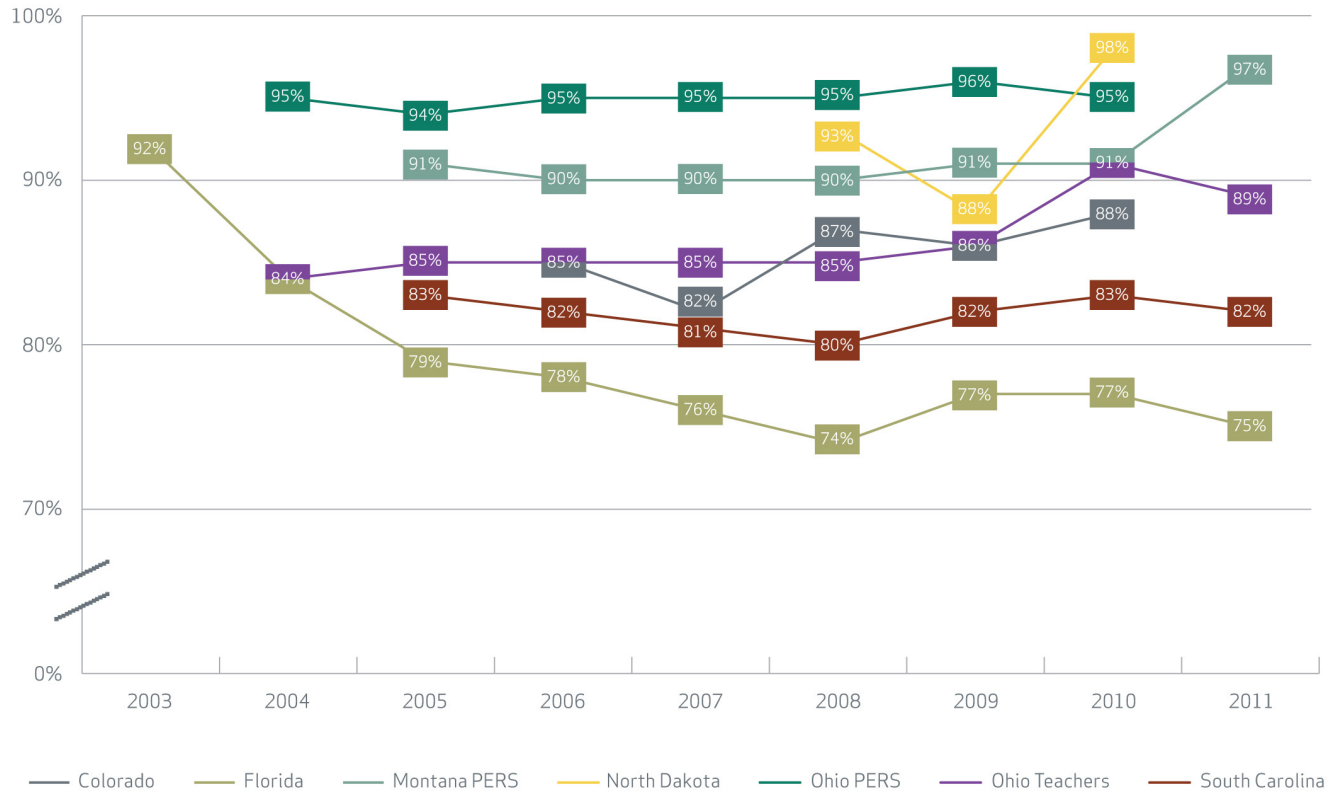
In Washington, the statewide retirement plan for public employees other than teachers (PERS) also offers a choice between the traditional DB plan and a combined DB-DC plan. The NIRS report finds that an impressive 68 percent of new members in Washington have actively chosen the all-DB plan over the default of the combined DB-DC plan, and only 11 percent of new hires actively select the combined DB-DC, as shown in Table 5.

Table 5: Cumulative Washington PERS New Hire Elections, March 2002 through June 2011

DB Plan Active Enrollments	Total Elections for DB & DC Combined Plans	Combined DB & DC Plan by Default	Combined DB & DC Plan Active Enrollments
68%	32%	21%	11%

Source: Decisions, Decisions: Retirement Plan Choice for Public Employees and Employers. NIRS 2011.

Figure 1: Total DB Election over Time



Source: Decisions, Decisions: Retirement Plan Choice for Public Employees and Employers. NIRS 2011.

COMPARING WASHINGTON'S EXPERIENCE WITH THAT OF OHIO

To see if other states have experienced retirement plan choices by K-12 teachers that are similar to those in Washington State, we consider retirement plan election experience for the State Teacher Retirement System of Ohio (STRS). This retirement system is the only other statewide teacher retirement system that allows employees a retirement plan choice with a DB-DC Combined plan. Since July 1, 2001, STRS has allowed new employees to choose between an all-DB plan, an all-DC plan, and a Combined DB-DC plan.[46]

The STRS DB pension provides a benefit of 2.2 percent of final average salary for each year of service at age 65, or any age with 30 years of service. Each year, cost of living adjustments will be made to the original benefit. Public employees in Ohio do not participate in Social Security, so their retirement plan also has to provide a basic safety net other Americans have. Prior to August 2015, teachers with 35 or more years of service receive an enhanced benefit multiplier. In the Combined Plan, benefits consist of a DB portion equal to one percent of final average salary for each year of service at age 60, and an annuity from the DC portion based on the value of the DC account and market annuity rates at the time of retirement. A teacher can start income from the DC portion at age 50. The Combined Plan benefits do not include cost-of-living adjustments.[47]

In the Combined Plan, employer contributions fund DB benefits, and all member contributions are credited to DC accounts.[48] The employee contribution is currently 12 percent of pay for all Ohio teachers, with scheduled increases in the next few years. Of that, 11 percent of pay is credited to the DC account, and the additional one percent of pay is used to pay for the employees' share of the cost for disability and survivor benefits and access to retiree health care coverage.[49] A portion of the employer contribution for teachers in the Combined Plan and DC plan is used to pay down STRS' unfunded liabilities. STRS provides a chart comparing all of the features of the plans.[50]

New teachers have a six-month election window in which to make their choice. The default is the traditional DB pension. After the member is put in the DB plan, either by default or by active election, he or she cannot elect out. Members who choose the Combined Plan or DC plan have a one-time option, after four years of service, to switch to one of the other two plans. If teachers change into the DB plan, they forfeit their DC accounts and are treated as if they had been in the DB plan since their hire date. Employees cannot switch plans after the end of their fifth year.[51] The vast majority of Ohio teachers do not make use of this "do-over" option, which suggests that most teachers are satisfied with the initial plan election.[52]

Since choice was first offered in 2002, a rather consistent plan enrollment trend developed for STRS members. Table 6 summarizes the choices of over 200,000 new Ohio teachers. Overall, 86 percent of new teachers participate in the DB pension, with a slight bump up in DB pension elections occurring after 2009. Since 2002, on a cumulative basis, only four percent of new teachers have elected the Combined Plan, and only nine percent have elected the DC plan.

The stark differences in election patterns occurring in Ohio and Washington indicate that analyzing the experience in Washington alone may not be informative for policymakers. For many young teachers, retirement may be a distant reality, and other factors could be higher priorities, such as other forms of compensation, grade levels and courses taught, and other working conditions. While election patterns may initially suggest that many participants may not make an active decision and thereby be passively placed into whichever plan is the default, it is interesting to note that in 2013 more than a majority of new Washington teachers actively elected to participate in TRS2. Thus, further research might be needed to provide insights into teachers' motivations for making active versus passive elections.

Table 6: Teacher Retirement Plan Elections for STRS Ohio Plans

Year Ending June 30	Defaulted to DB	Elected DB	Total DB	Elected DC	Elected Combined	Total Elections
2002	65%	16%	81%	12%	7%	12,777
2003	71%	15%	86%	9%	5%	22,105
2004	70%	15%	85%	11%	5%	18,976
2005	71%	15%	86%	11%	4%	19,164
2006	72%	13%	85%	11%	4%	17,105
2007	72%	13%	85%	11%	4%	17,098
2008	72%	14%	86%	11%	4%	16,960
2009	71%	15%	86%	10%	4%	16,943
2010	81%	10%	91%	7%	2%	16,173
2011	79%	10%	89%	8%	3%	15,017
2012	77%	11%	88%	9%	3%	14,046
2013	76%	12%	88%	9%	3%	15,362
FY 2014 YTD	75%	12%	87%	9%	4%	7,605
Total	152,662	27,692	180,354	20,506	8,471	209,331
	73%	13%	86%	10%	4%	

Source: Pension Funding Powerpoint Provided by STRS Ohio dated March 7, 2014

TEACHER EFFECTIVENESS AND RETIREMENT PLAN CHOICE

DB plans are an important recruitment tool. Employees seem to value pensions to the extent that they willingly forego higher wages in order to be ensured guaranteed retirement income.[53] Researchers at Boston College find that because DB pensions favor long-term service, public employees' relatively longer tenure compared to their private sector counterparts can lead to a public employee preference for DB pensions instead of DC plans.[54] Also, employers with DB pensions may be more able to attract desirable skilled employees due to a self-selection effect. This means that employees who are more likely to stick with a job also tend to be more apt to accept employment that offers a DB pension in the first place.[55] As mentioned earlier, Nyce finds that DB pensions have a much larger retention effect than DC plans. He also finds that DB pension plans raise employees' commitment to their employer, while no such effect existed for DC plans. Thus, DB pensions can play a crucial role in retaining employees who are willing to make a long-term contribution to their employer's success.[56]

Within the teaching profession specifically, public school teachers have been found to turn over less often than private school teachers, largely due to their compensation, including pension benefits. Ingersoll, as well as Guarino and his colleagues, find that public school teachers turn over less than their private school counterparts.[57] Furthermore, Ingersoll finds that most public school teachers who turn over move to another school district rather than leave the profession entirely, while private school teachers are more likely to leave the profession.[58] Data from The National Center for Education Statistics verify this trend, finding that 15.9 percent of private school teachers left teaching after the 2007-2008 school year, as compared with just eight percent of public school teachers who left teaching in the same school year.[59]

Even as DB pensions retain employees longer, there is evidence that they actually increase worker productivity. Dorsey finds "various indirect evidence" that certain productivity gains are attributable to DB pensions.[60] Moreover, Hall's analysis of changes in productivity when a company moves away from a DB pension finds that those firms that moved from a DB to a DC plan between 1995 and 2000 experienced productivity losses, especially as compared with those firms who retained their DB plans. Hall hypothesizes that this loss of productivity may be due to the fact that workers turn over more quickly with the DC switch, leaving the employer before acquiring all of the job-specific skills necessary to achieve higher productivity. (The author acknowledges that more work needs to be done on this correlation.)[61]

Within the teaching profession specifically, the teacher effectiveness literature clearly shows that as teachers gain experience, they become more effective. Ingersoll, Miller, and Stuckey list less stability in the teaching force as one of the trends transforming education. They cite prior research which suggests that teachers' effectiveness—as measured by gains in students' test scores—increases significantly with additional experience for the first several years in teaching. They use this evidence to argue that there are negative consequences to losing new teachers before they fully develop their skills.[62]

Because DB pensions serve to retain teachers longer, it would follow that such increased retention would lead to productivity gains. That is, the DB pension plan serves to retain the most qualified teachers; this, in turn, increases overall teacher quality at each school. Indeed, in a simulation analysis of teacher effectiveness and retirement benefits, Weller finds the counterfactual to be true—that average teacher effectiveness could fall by at least 4.3 percent and 1.2 percent, respectively, should DB pensions be replaced by DC plans or cash balance plans for teachers.[63]

Also, Munnell finds that workers leaving state and local government employment on average command wages that are seven percent higher in the private sector than those commanded by private-sector workers coming into the public sector. Munnell's analysis suggests that states and localities with relatively generous pensions should be cautious in implementing pension reform, because reductions in benefits may result in a reduction in their ability to maintain a high-quality workforce.[64]

While the Bellwether paper finds evidence that—for a "subset of teachers"—more effective teachers are more likely to choose the TRS3 plan, it is important to note that they focus

their comments on the top quintile. This substantially narrows the already small sample (10 percent of the 1997 Cohort) to a mere two to three percent of the total group.[65] When the authors report on the full 2,768 performance-related observations, a difference in the estimated performance of those teachers who choose TRS3 exceed the average of those who choose TRS2 by just two to three percent of one standard deviation. The authors further explain that this difference was similar in magnitude to the performance difference between a rookie teacher and a teacher with one or two years in the classroom.[66]

In earlier research, Goldhaber and Grout commented: "whether the quality of the workforce is affected by pension choice will ultimately depend on how the two plans differently affect teacher retention."[67] This is more in line with the prior research already discussed, including Nyce's demonstration of the retentive power of the DB plan among workers in general, as well as Weller's finding that moving K-12 teachers from DB pensions to cash balance or DC plans would increase teacher turnover.[68]

Directly on this point about retention of employees who can choose plans, Chingos and West, who studied the pension choices made by teachers in Florida, indicate that by the sixth year, 15 percent more of the teachers in Florida who chose the DC plan over the DB plan have left the classroom.[69] With education research indicating that teachers reach their most productive performance with three to five years of experience,[70] the experience in Florida suggests that the DC plan might adversely impact teacher quality, while at the same time adding costs associated with replacing teachers just when they reach their peak teaching skills.

CONCLUSION

This paper more closely examines the benefit elections of teachers who are given a choice between a DB pension and a DB-DC combination plan. It finds that newly hired teachers show an ongoing and growing preference for the DB pension. Given the retention effects of DB plans and the fact that changes already made to teacher retirement systems should put them on the path to a strong financial footing, policymakers should proceed with caution when considering any further changes to retirement plan design. The financial security provided by DB pensions helps to attract new teachers and retain experienced teachers, while enabling public schools to manage their educational workforces successfully.

While the 1997 Cohort of teachers in Washington initially chose the DB-DC combination plan in high numbers, further analysis suggests that financial incentives and investment market conditions may have tilted decisions toward the DB-DC combination. In addition, it appears that DB-DC combination plans may be attractive to teachers insofar as the state takes on a significant portion of the risk that individual employees typically face in a DC plan. Key features of TRS3 include allowing teachers to have WSIB invest their DC accounts, and to maximize retirement income by purchasing annuity income through WSIB. Teachers would have to accumulate significantly more assets in their retirement accounts in order to purchase an equivalent annuity from the individual insurance market.

Ongoing active teacher plan elections after the 2008 financial crisis show that newly hired teachers have steadily shifted towards choosing the traditional pension benefit. Similarly, in Ohio, the only other state that provides choice between a DB pension and a combined DB-DC plan, only a small percentage of teachers have elected the Combined Plan.

Lastly, academic research on education productivity indicates that teacher retention is critical to the quality of education. Because DB pensions provide incentives to retain employees, policymakers should consider any reforms to public teacher pension plans in the broader context.

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HOW DID STATE/LOCAL PLANS BECOME UNDERFUNDED?

*By Alicia H. Munnell, Jean-Pierre Aubry, and Mark Cafarelli**

Introduction

This *brief* presents a new tool that describes the evolution of the unfunded liability for each of the 150 plans in the *Public Plans Database*. The period of analysis is from 2001, when most plans were fully funded, to 2013, when virtually every plan reported significant underfunding. The goal is to identify the impact on underfunding of a few well-defined factors, such as poor investment returns, inadequate contributions, and benefit changes.

The discussion proceeds as follows. The first section describes the methodology and presents the results for one of the better-funded plans in our sample. The second section examines the range of experiences across plans, which are classified as good, average, or bad based on their funding performance. While all plans were hurt by two financial crises, bad plans also significantly undermined their financial position by failing to make adequate contributions and having to correct for overly optimistic actuarial assumptions. The final section concludes that this type of analysis presents a clean story of what happened in each plan. It reports the impact of the financial crises, but also highlights the inadequacy of plan sponsor contributions. This new tool provides a valuable way to cut through the political rhetoric and identify why a plan is in trouble.

Methodology

For most plans, the actuarial valuation includes the Unfunded Actuarial Accrued Liability (UAAL), the change in the UAAL, and some information on the

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factors that led to the change. These factors include: 1) investment returns; 2) contributions; 3) deviations from actuarial assumptions (e.g. workers living longer than expected); 4) benefit changes; and 5) assumption changes (e.g. long-run investment returns).

Let's start with data from the Georgia Teachers Retirement System (TRS) report for fiscal year 2013, during which the UAAL rose by $1,539.7 million (see Table 1).[1] For each year, the UAAL grows by the interest on the existing unfunded liability and is reduced by contributions paid toward the unfunded liability. If contributions do not cover the interest cost – and the cost of benefits acrrued in 2013 – the unfunded liability will grow (see Box). The unfunded liability will also grow or decline as a result of a host of other factors listed in Table 1, which comes straight from the Georgia TRS actuarial valuation report.

The challenge is to take these individual changes for each year and for each plan, categorize them in a consistent fashion across plans, and combine the data for 2001-2013 to highlight the factors that have played a role in the development of the UAAL over the past 12 years.[2] The year 2001 was selected as the starting point because it is the first year for which complete data were available for our sample of plans. The analysis is based on each plan's actuarial assumptions and methods – including a discount rate that reflects the plan's long-run expected return and the smoothing of investment gains and losses.[3] Moving systematically from one year to the next over this period presents a clear picture of how unfunded liabilities grew for each plan.

The results for Georgia's TRS, one of the better funded plans in our sample, are shown in Table 2 on the next page. The table contains a lot of numbers, so it may be helpful to explain what is going on. Starting in 2001, Georgia TRS was more than fully funded; it had a surplus of $1,431.4 million. In 2002, poor investment returns – measured on an actuarially smoothed basis – cut the surplus in half. The smoothing of the 2002 market losses limited the growth of actuarial assets in the years that followed. In addition, Georgia TRS (like many plans that were overfunded during the early to mid-2000s) used its funding surplus to lower the contributions made from 2002-2007 to a level below the normal

Table 1. 2012-2013 Change in the UAAL for Georgia TRS, from the Plan's Actuarial Valuation, Millions of Dollars

Item	Amount of increase/(decrease)
Interest (8.09%) added to previous unfunded accrued liability	$977.8
Accrued liability contribution	(604.7)
Experience:	
Valuation asset growth	1,241.1
Pensioners' mortality	52.7
Turnover and retirements	378.2
New entrants	96.2
Salary increases	(715.2)
Method changes	(926.7)
Interest smoothing	915.9
Miscellaneous	124.4
Total	1,539.7

Source: Georgia TRS Actuarial Valuation (2013).

How Should Plans Fund? The ARC vs. Normal Cost Plus Interest on the UAAL

The commonly used metric for adequate funding is the Annual Required Contribution (ARC) as defined by the Governmental Accounting Standards Board (GASB). This measure consists of two components: a payment to cover the normal cost – the cost of benefits accrued in the current year – and a payment to amortize the UAAL. This *brief* uses a different measure for adequate contributions: the normal cost plus the interest on the unfunded liability – the minimum amount required to keep the UAAL from growing each year.

Interestingly, some actuarial methods produce an ARC that is less than what is required to keep the UAAL in check. Traditionally, GASB has allowed the UAAL to be amortized over 30 years for reporting purposes. A 30-year horizon, when coupled with a percent-of-pay method that backloads payments, results in initial payments that are too low to keep the UAAL from growing for many years. Under a closed 30-year period, the UAAL would grow for the first half of the amortization period before beginning to decline. Under a rolling (open) period, where each year the amortization period is reset to 30 years, the plan would be continually paying only the small initial payments and *never* see the UAAL decline.[4]

Table 2. Change in the UAAL for Georgia TRS, 2001-2013, Millions of Dollars

Year	Investment return lower/(higher) than assumed	Contribution lower/(higher) than normal cost + interest on UAAL	Actuarial experience worse/(better) than assumed	Benefit changes	Changes to assumptions & methods	Other	Total change in UAAL	UAAL
2001	($296.4)	($229.1)	($791.3)	–	$657.9	$27.0	($631.9)	($1,431.4)
2002	667.7	(62.7)	30.6	–	–	–	635.6	(795.8)
2003	788.5	19.7	768.5	–	(1,247.9)	–	328.8	(467.0)
2004	507.5	44.6	(473.0)	–	–	–	79.1	(387.9)
2005	516.4	20.3	(77.6)	–	903.1	–	1,362.2	974.3
2006	675.3	125.0	312.7	48.5	(339.2)	–	822.3	1,796.6
2007	(132.3)	183.5	746.0	–	–	303.5	1,100.7	2,897.4
2008	548.9	83.1	771.4	–	–	478.7	1,882.1	4,779.5
2009	2,433.5	233.5	556.4	–	(2,062.3)	70.9	1,232.0	6,011.5
2010	1,674.9	187.1	(557.5)	–	1,472.4	274.2	3,051.1	9,062.6
2011	2,018.7	336.9	(181.8)	(685.5)	–	–	1,488.3	10,550.9
2012	1,855.1	402.7	(722.4)	–	–	–	1,535.4	12,086.3
2013	1,241.1	1,289.0	(188.1)	–	(926.7)	124.4	1,539.7	13,626.0
Total	12,498.9	2,633.6	193.9	(637.0)	(1,542.7)	1,278.7	14,425.6	–

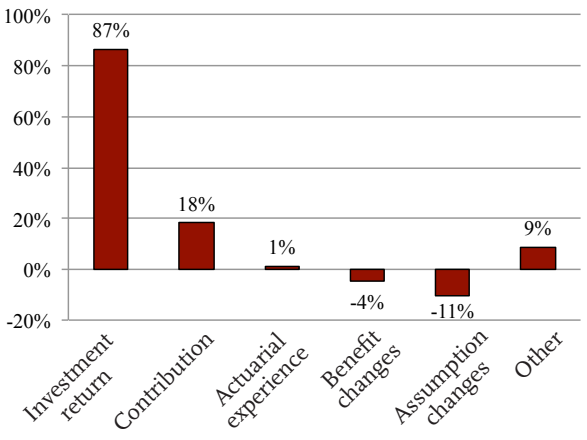
Source: Authors' calculations from Georgia TRS Actuarial Valuations (2001-2013).

cost (known as negative amortization). Even though it was making its full Annual Required Contribution (ARC) as defined by the Governmental Accounting Standards Board (GASB), the unfunded liability grew as the benefits being accrued – the normal cost – exceeded the contributions being made.

The combination of poor investment returns and inadequate contributions would have had a more powerful effect had not the plan increased its discount rate from 7.25 percent to 7.5 percent in 2003, lowering the accrued liability. And in 2007, after most of the 2002 losses had been realized, Georgia TRS posted its first actuarial investment gain since 2001. But then, in 2008 and 2009, it was hit by two years of poor returns. Similar to the years following 2002, the smoothing of market losses continued to limit growth of actuarial assets in the years that followed. And while Georgia TRS continued to pay its full ARC, the amount was below normal cost plus interest on the UAAL, a practice which continued from 2009-2013.[5] Finally, throughout the period, the plan's actuarial experience was sometimes better than assumed and sometimes worse; these changes were largely offsetting. Overall, then, the story is that inadequate contributions and poor investment returns moved the UAAL from surplus to deficit, resulting in an unfunded liability of $13,626.0 million in 2013.

While Table 2 details the year-over-year changes in the UAAL, it is interesting to look at the relative impact of each factor on the overall change in the UAAL from 2001-2013. As shown in Figure 1, the biggest contributor to the unfunded liability for Georgia TRS

Figure 1. Reasons for Change in the Aggregate UAAL for Georgia TRS, as a Percentage of Overall Change in UAAL from 2001-2013



Source: Authors' calculations from Georgia TRS Actuarial Valuations (2001-2013).

has been the shortfall between actual and assumed investment returns. Critics may contend that the assumed discount rate based on expected long-run returns was simply too optimistic and that costs should have been projected using a riskless rate. Blame it on the assumptions; blame it on the market outcomes; but regardless of how the outcome is framed, poor investment performance was the major reason for the shortfall.

Variation by Plan Type

Public pensions are extremely heterogeneous in their approach to funding benefit obligations. As a result, some plans are in a better funding position than others. It is interesting to compare the performance of plans along these lines. Table 3 sorts the 150 plans in the *Public Plans Database* by their average funded ratios over the period 2001-13 and shows the funded ratio, the percentage of ARC paid, and the percentage change in the UAAL for plans in the top (good), middle (average), and bottom (bad) thirds of the distribution.

Table 3. Key Funding Parameters for Plans in the Top, Middle, and Bottom Thirds, 2001-13

Plan type	Average funded ratio	Average percentage of ARC paid	Percentage change in UAAL
Good	98.3	100.0	26.7
Average	82.5	91.2	38.6
Bad	66.3	63.1	34.7
Total	82.4	89.8	100.0

Source: Authors' calculations from *Public Plans Database* (2001-2013).

Table 4 presents the source of the increase in unfunded liability for the plans in each group. By definition, the components total to 100 percent and therefore do not reflect the fact that good plans have relatively low unfunded liabilities relative to bad plans. Nevertheless, the patterns are illuminating. First, all plans were hurt by the financial crises, which was the major factor causing an increase in the UAAL. Interestingly, across all the plan groups, contributions fell short of the normal cost plus the interest on the unfunded liability; contributions for the poorly funded plans, however, fell much further short than those for the well-funded plans. And the actuarial experience of the poorly funded plans was worse than expected. The worst-funded plans responded to these shortfalls by cutting benefits, which partially mitigated the increase in the UAAL.

It may be useful to look at one of the most poorly managed plans – New Jersey Teachers (TRS). (Georgia TRS, discussed above, is one of the good plans.) In every year since the turn of the century, New Jersey has failed to contribute enough to cover the normal cost and the interest on the unfunded liability – much less make a stab at paying off the unfunded liability. This shortfall in payments comes close to the two financial crises in its effect on the unfunded liabil-

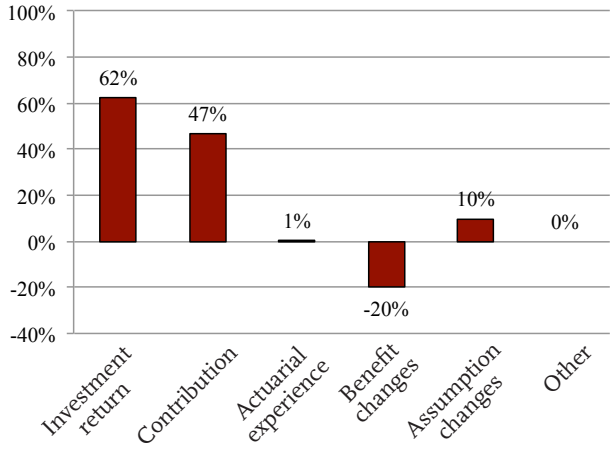
Table 4. Reasons for Change in the UAAL for Plans in the Top, Middle, and Bottom Thirds, 2001-13

Plan type	Investment return lower/(higher) than assumed	Contribution lower/(higher) than normal cost + interest on UAAL	Actuarial experience worse/(better) than assumed	Benefit changes	Changes to assumptions and methods	Other	Total
Good	69.0%	13.4%	(0.1)%	5.3%	7.8%	4.7%	100.0%
Average	59.0	23.0	(0.6)	(0.2)	6.6	12.1	100.0
Bad	55.4	32.5	7.5	(6.3)	7.5	3.4	100.0
Total	60.4	23.7	2.4	(0.8)	7.2	7.1	100.0

Sources: Authors' calculations from *Public Plans Database* (2001-2013); various actuarial valuations; and plan Comprehensive Annual Financial Reports (2001-2013).

ity (see Figure 2). In addition, corrections to overly optimistic demographic assumptions (termination, retirement, disability, and mortality) further increased the unfunded liability. To offset this increase, the state eliminated the cost-of-living adjustment (COLA) for all current and future retirees effective October 2011.[6] The numbers tell a very clear story: failure to make contributions is a key reason for the financial problems facing the New Jersey TRS, a fact that is often obscured in the political debate.

Figure 2. Reasons for Change in the Aggregate UAAL for New Jersey TRS, as a Percentage of Overall Change in UAAL from 2001-2013



Source: Authors' calculations from New Jersey TRS Actuarial Valuations (2001-2013).

Conclusion

The tool described in this analysis presents a clean story of what happened in each plan based on the annual reports produced by each plan's actuary. The analysis simply involves categorizing each component of change in a consistent manner across plans and pulling together data for the last 12 years for each plan. But the output is powerful. It shows the impact of the two financial crises and highlights the inadequacy of contributions, based on backloaded contribution schedules and rolling amortization periods. The numbers tell a story that often gets obscured in the political debate. This type of analysis should be added to every plan's annual actuarial valuation.

Endnotes

1 Georgia TRS Actuarial Valuation prepared as of June 30, 2013, page 10.

2 Using Georgia TRS as an example, salary increases, turnover and retirements, pensioners' mortality, and new entrants were categorized as "actuarial experience." Interest smoothing and method changes were categorized as "changes to assumptions and methods." Valuation asset growth was categorized as "investment return," and miscellaneous was categorized as "other."

3 Each plan's Comprehensive Annual Financial Reports were used if the actuarial valuation did not provide any relevant data on factors underlying the change in the unfunded liability. For some plans, the only information available was the overall change in the UAAL.

4 In practice, only a handful of plans (albeit including CalPERS), use an open 30-year amortization schedule in conjunction with a level percent-of-pay amortization method. The purpose of the 30-year period is to achieve payments that are level as a percent of the plan's aggregate payroll over the work life of a career employee. The issue is that employers often do not understand the consequences of this method in terms of addressing unfunded liabilities.

5 The amortization period used by Georgia TRS has changed many times since 2001. UAAL payments made in 2001 were based on a 7-year amortization period. Those made in 2002 and 2003 were based on a rolling 40-year period. Those made from 2003-2008 were based on rolling amortization periods between 11 and 15 years. Those made from 2009-2013, when the plan was the most underfunded, were based on a rolling 30-year amortization schedule. Amortization payments made in 2016 will be based on a closed 30-year period for the UAAL existing as of June 30, 2013, and a closed 30-year period for any additional UAAL arising in each year after June 30, 2013.

6 In 2011, Gov. Christie signed into law SB 2937, which removed all COLAs for current and future retirees until the plan is 80 percent funded, after which a panel will decide whether or not to reinstate them. The Public Employees Unions filed a class action lawsuit in Trenton District Court in 2011 (*New Jersey Education Association vs. State of New Jersey*). This case was dismissed for lack of jurisdiction in U.S. District Court in 2012, and was dismissed again by the State Supreme Court in 2012, effectively upholding the COLA cut. The plaintiffs appealed in January 2014, however, and on June 26, 2014, a state appeals court ruled that retirees and workers do have a contractual right to COLAs. The COLA cuts currently remain in place as the case is being sent to a lower court for further review.

References

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