Agenda

ND Teachers' Fund for Retirement
Board Meeting

Thursday, October 23, 2014
1:00 pm

Peace Garden Room
State Capitol, Bismarck, ND

1. Call to Order and Approval of Agenda - Pres. Gessner (Board Action) 5 min

2. Approval of Minutes of September 25, 2014 Meeting – Pres. Gessner (Board Action) 5 min

3. 2014 Valuation Report and Funding Projections – Kim Nicholl, Segal (Board Action) 60 min

4. GASB Information – Kim Nicholl, Segal (Information) 15 min

5. Experience Study Planning – Kim Nicholl, Segal (Information) 15 min

6. Board Education: Defined Contribution and Hybrid Plans - Kim Nicholl, Segal (Information) 30 min

7. Legislative Update – Fay Kopp (Information) 15 min

8. ND SBA Proposed Resolution – Fay Kopp (Information) 10 min

9. GASB Planning Update – Fay Kopp and Shelly Schumacher (Information) 15 min

10. Annual TFFR Program Audit Report – Dottie Thorsen and Terra Miller Bowley (Board Action) 15 min

11. Trustee Education/NCTR Conference – Kim Franz and Mel Olson (Information) 10 min

12. Consent Agenda – Disability Application (Board Action) 5 min
    *Executive Session possible if Board discusses confidential information under NDCC 15-39.1-30.

13. Other Business

14. Adjournment

Next Board Meeting: January 22, 2015

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

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
SEPTEMBER 25, 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:	Michael DeWitt, Data Processing Coordinator Connie Flanagan, Fiscal & Invest Op Mgr Bonnie Heit, Office Manager David Hunter, ED/CIO Fay Kopp, Deputy ED/CRO Rich Nagel, Information Systems Supervisor Shelly Schumacher, Retirement Program Manager
OTHERS PRESENT:	Jerry Coleman, DPI Karee Magee, Bismarck Tribune Janilyn Murtha, Attorney General's Office Dennis Nathan, NDRTA Janet Welk, ESPB

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, September 25, 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.

TREASURER SCHMIDT MOVED AND MR. LECH 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 special TFFR board meeting held August 22, 2014.

MR. OLSON MOVED AND MRS. FRANZ SECONDED TO APPROVE THE MINUTES OF THE SPECIAL TFFR BOARD MEETING HELD AUGUST 22, 2014.

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

BOARD EDUCATION: ND EDUCATION DEMOGRAPHICS:

Mrs. Fay Kopp, Deputy Executive Director/Chief Retirement Officer, introduced Mr. Jerry Coleman, Director of School Finance and Organization with the Department of Public Instruction (DPI).

Mr. Coleman presented information on past, present, and future teacher and student demographic changes in North Dakota (ND). Statewide projections show moderate enrollment increases over the next decade, with expected enrollments to increase by 3,500 annually. Increases in the number of students, teachers, and salary growth will all have an effect on TFFR.

Discussion and questions followed. The presentation is on file at RIO.

BOARD EDUCATION: ND TEACHER SHORTAGE:

Mrs. Kopp introduced Ms. Janet Welk, Executive Director of the Education Standards and Practices Board (ESPB). Ms. Welk presented information on ND teacher shortages and what is being done to address the situation. ESPB has designated all subject areas as critical shortage areas for the 2014-15 year.

Board discussion followed. Ms. Welk’s presentation is on file at RIO.

TFFR LEGISLATIVE UPDATE:

Mrs. Kopp reported on the Legislative Government Finance Committee (LGFC) meeting held September 10, 2014. The Committee is continuing to discuss a bill draft that 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. The Committee is also discussing a draft resolution which would transfer certain funds from the foundation aid stabilization fund for the purposes of addressing unfunded benefit obligations of state retirement funds.

The Legislative Employee Benefits Programs Committee (LEBPC) met on September 18, 2014. Mrs. Kopp gave testimony on Bill No. 140 at the meeting. The proposed amendment, recommended by outside tax counsel, IceMiller, was submitted to the Committee. Segal will give TFFR's 2014 actuarial valuation report at the next LEBPC meeting to be held October 29, 2014.

Board discussion followed.

The board recessed at 2:56 p.m. and reconvened at 3:07 p.m.

ANNUAL TFFR INVESTMENT REPORT:

Mr. David Hunter, ED/CIO, presented the annual TFFR investment report. TFFR generated a net return of 16.5% for the year ended June 30, 2014, and a 9% return over the last 30 years. During the last 5 years, pension risk has declined, and investment management fees and expenses have also declined. Mr. Hunter explained that due to the enhanced performance reporting for TFFR, net investment returns have been restated to reflect the recognition of intra-month cash flows during the last four years. He also noted an audit supervisor is scheduled to join the RIO staff on October 13, 2014.

Board discussion and questions followed. The report is on file at RIO.

MR. CORNEIL MOVED AND MR. LECH SECONDED TO ACCEPT THE 2014 ANNUAL INVESTMENT REPORT.

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

Mr. Hunter reported no changes have been made to the Investment Policy Statement in the last year. Mr. Hunter requested the board accept the policy without amendment.

TREASURER SCHMIDT MOVED AND MR. LECH SECONDED TO ACCEPT THE TFFR INVESTMENT POLICY STATEMENT WITHOUT AMENDMENT.

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

Board members discussed how to respond to media requests. The TFFR board does not have a specific policy on who should address media inquiries. The Board generally agreed that as has been done in the past, requests for TFFR pension funding and benefits information can be referred to Mrs. Kopp, and requests for SIB investment information can be referred to Mr. Hunter. The Board president may speak on behalf of the Board if the President has the necessary information to address the request, however most requests should be referred to RIO staff. Mrs. Kopp will draft a policy and bring to a future meeting.

ANNUAL RIO BUDGET AND EXPENSE REPORT:

Mrs. Connie Flanagan, Fiscal and Investment Operations Manager, reviewed the annual RIO budget and expense report for the fiscal year ending June 30, 2014. She explained total expenditures (both continuing appropriations and budgeted expenditures), consultant expenses, and investment expenses.

Board discussion and questions followed. The report is on file at RIO.

TREASURER SCHMIDT MOVED AND MR. OLSON SECONDED TO ACCEPT THE ANNUAL RIO BUDGET AND EXPENSE REPORT.

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

Supt. Baesler left the meeting at 3:43 p.m.

SIB CUSTOMER SATISFACTION SURVEY:

President Gessner provided a summary of the board members' responses to the SIB customer satisfaction survey. The summary will be submitted to the SIB.

MR. LECH MOVED AND TREASURER SCHMIDT SECONDED TO APPROVE THE SIB CUSTOMER SATISFACTION SURVEY AS PRESENTED.

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

Treasurer Schmidt left the meeting at 3:55 p.m.

SIB AUDIT COMMITTEE UPDATE:

President Gessner updated the Board on the SIB audit committee activities. The next audit committee meeting has been moved to October 24, 2014. The annual audit report will be given to the TFFR board at the October 23, 2014, meeting.

TFFR POLICY CHANGES:

Mrs. Kopp reviewed proposed amendments to Policy C-2 – Board Meetings.

MR. LECH MOVED AND MR. OLSON SECONDED TO ACCEPT THE AMENDMENTS TO POLICY C-2.

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

Mrs. Kopp reviewed the proposed new policy, Disclosure of Confidential Information for Treatment, Operational, or Payment Purposes.

MR. OLSON MOVED AND MRS. FRANZ SECONDED TO ADOPT THE NEW POLICY-DISCLOSURE OF CONFIDENTIAL INFORMATION FOR TREATMENT, OPERATIONAL, OR PAYMENT PURPOSES.

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

ELECTRONIC BOARD DOCUMENTS:

Mrs. Kopp and Mr. Rich Nagel, Information Systems Supervisor, provided information on accessing board materials from the RIO Reference Library and using a personal device at board meetings. No confidential material will be posted in the Reference Library. Board members will indicate the method they want to receive board material (paper, electronic, or both). The chosen method will be used for the October board packet. Mr. Nagel also reported on video conferencing of board meetings. Workforce Safety and Insurance (WSI) and North Dakota Association of Counties (NDACO) have the necessary equipment. Video conferencing will be tested when holding meetings at WSI in January-April 2015. The top priority at this time is implementing member web services. Other future IT projects include software to use in counseling members, outreach programs and presentations by video and audio conferencing, and redesign of RIO website. Board discussion and questions followed.

OTHER BUSINESS:

Mrs. Franz and Mr. Olson will be attending the National Council on Teacher Retirement (NCTR) Conference October 11-15, 2014, in Indianapolis, Indiana. Mr. Lech will be attending the Callan College and President Gessner will attend Callan’s annual conference.

The next board meeting will be held October 23, 2014. Segal will be presenting the results of the 2014 valuation.

ADJOURNMENT:

With no further business to come before the Board, President Gessner adjourned the meeting at 4:50 p.m.

Respectfully Submitted:

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

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Darlene Roppel
Reporting Secretary

MEMORANDUM

TO: TFFR Board

FROM: Fay Kopp

DATE: October 16, 2014

SUBJ: 2014 Valuation Report and Funding Projections

TFFR actuarial consultant, Kim Nicholl, Senior Vice President with Segal Company, will be at the October TFFR Board meeting to present the 2014 valuation report and future funding projections. Attached is a copy of the report.

As expected, TFFR's funded ratio improved from about 59% to 62% which is good news. Plan funding is expected to continue to improve in the years ahead due to the statutory contribution rate increases and positive investment performance.

Please review the report and plan to discuss at the meeting.

Enclosure

North Dakota Teachers' Fund for Retirement

Actuarial Valuation and Review
as of July 1, 2014

Segal Consulting

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

October 16, 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 certify that the information contained in this report is accurate and fairly presents the actuarial position of the North Dakota Teachers' Fund for Retirement (TFFR) as of July 1, 2014.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion the results presented also comply with the North Dakota Century Code, and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board (GASB). The undersigned are independent actuaries. All are Fellows of the Society of Actuaries, Enrolled Actuaries, and Members of the American Academy of Actuaries, and all are experienced in performing valuations for large public retirement systems. They all meet the Qualification Standards of the American Academy of Actuaries.

ACTUARIAL VALUATION

The primary purposes of the valuation report are to determine the adequacy of the current employer contribution rate, to describe the current financial condition of TFFR, and to analyze changes in TFFR's financial condition. In addition, the report provides information required by TFFR in connection with the Governmental Accounting Standards Board Statement No. 67 (GASB 67) and it provides various summaries of the data. Valuations are prepared annually, as of July 1 of each year, the first day of TFFR's plan and fiscal year.

FINANCING OBJECTIVES

The member and employer contribution rates are established by statute. The member rate was increased from 9.75% to 11.75% effective July 1, 2014. The employer rate was increased from 10.75% to 12.75% effective July 1, 2014. The 11.75% member contribution rate and 12.75% employer contribution rate will remain in effect until TFFR is 100% funded on an actuarial basis. At that point, the employer and member contribution rates will revert to 7.75%.

The rates are intended to be sufficient to pay TFFR's normal cost and to amortize TFFR's unfunded actuarial accrued liability (UAAL) over a period of 29 years beginning July 1, 2014, although at any given time the statutory rates may be insufficient.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

In order to determine the adequacy of the 12.75% statutory employer contribution rate, it is compared to the actuarially determined contribution (ADC). The ADC is equal to the sum of (a) the employer normal cost rate and (b) the level percentage of pay required to amortize the UAAL over the 30-year closed period that began July 1, 2013 (29 years remaining as of July 1, 2014). For this calculation, payroll is assumed to increase 3.25% per year. As of July 1, 2014, the ADC is 11.57%, compared to 10.26% last year. This is less than the 12.75% rate currently required by law.

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) increased from last year. The funded ratio at July 1, 2013, was 58.8%, while it is 61.8% as of July 1, 2014. Based on the market value of assets rather than the actuarial value of assets, the funded ratio increased to 66.6%, compared to 61.4% last year.

The plan has a net asset gain of $151 million from previous years that has not yet been recognized in the actuarial value of assets because of the five-year smoothing. This unrecognized asset gain is due to market gains during FY 2011, FY 2013, and FY 2014 offset by an asset loss in FY 2012. As these gains are recognized over the next four years, the funded ratio is expected to continue to improve, assuming the plan earns 8.00% in the future.

REPORTING CONSEQUENCES

TFFR is required to disclose certain actuarial information in its Comprehensive Annual Financial Report (CAFR), including the Net Pension Liability (NPL), the sensitivity of the NPL to changes in the discount rate, a schedule of changes in NPL, and a comparison of actual contributions to the ADC. The State and the school districts need to comply with GASB 68, which also requires disclosure of certain actuarial information in their financial statements. This information will be provided in a separate report.

BENEFIT PROVISIONS

The actuarial valuation reflects the benefit and contribution provisions set forth in the North Dakota Century Code. These have not changed from the prior valuation.

ASSUMPTIONS AND METHODS

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Plan's actuary. On January 21, 2010, the Board adopted new assumptions, effective for the July 1, 2010 valuation. In our opinion, the assumptions as approved by the Board are reasonably related to the experience of the Plan.

Effective with the July 1, 2013 actuarial valuation, the Trustees adopted an Actuarial Funding Policy, which provides direction on how to calculate an actuarially determined contribution. The actuarially determined contribution is compared to statutory contribution rates as a measure of funding adequacy.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates, and funding periods.

DATA

Member data for retired, active, and inactive participants was supplied as of July 1, 2014, by the staff of the Retirement and Investment Office (RIO). We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was also supplied by the RIO staff.

Sincerely,

Segal Consulting, a member of the Segal Group

By:

Kim Nicholl, FSA, MAAA, EA
Senior Vice President and Actuary

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

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SECTION 1

VALUATION SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

SUPPLEMENTAL INFORMATION

SECTION 4

REPORTING INFORMATION

Significant Issues in the Valuation Year

1. 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) to comply with both Statements 67 and 68.

2. The employer statutory contribution rate for the fiscal year beginning July 1, 2014, under the North Dakota Century Code is equal to 12.75% of payroll for employers. Compared to the actuarially determined contribution of 11.57% of payroll, the contribution sufficiency is 1.18% of payroll as of July 1, 2014.

3. The 2011 legislative changes included increases to the statutory contribution rates: 2% each for employer and member effective July 1, 2012, and an additional 2% each for employer and member effective July 1, 2014. Employer and member contributions will be reset to 7.75% each once the Fund reaches a 100% funded ratio, measured using the actuarial value of assets.

4. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of July 1, 2014, is 61.8%, compared to 58.8% as of July 1, 2013. This ratio is a measure of funding status and its history is a measure of funding progress. The total 8% increase in the statutory contribution rates is expected to improve the funded ratio of the plan over time.

5. For the year ended June 30, 2014, Segal has determined that the asset return on a market value basis was 16.1%. After gradual recognition of investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 12.6%. This represents an experience gain when compared to the assumed rate of 8.0%. As of June 30, 2014, the actuarial value of assets ($1.940 billion) represented 92.8% of the market value ($2.091 billion).

6. The portion of deferred investment gains and losses recognized during the calculation of the July 1, 2014, actuarial value of assets contributed to a gain of $80,084,128. The demographic and liability experience resulted in a $8,882,399 loss.

7. As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 92.8% of the market value of assets as of June 30, 2014. 92.8% falls within the 20% corridor, so no further adjustment to the actuarial value of assets is necessary. Guidelines in Actuarial Standard of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding market value. The actuarial asset method complies with these guidelines.

8. When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age Normal) 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 (8.0%). 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. We note that the same is true for the Normal Cost component of the annual plan cost for funding and financial reporting.

9. The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to the Unfunded Actuarial Accrued Liability on a market value basis. The NPL decreased from $1,157,555,127 as of June 30, 2013, to $1,047,822,717 as of June 30, 2014.

10. This actuarial valuation report as of July 1, 2014, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected.

11. The Fund's cash flow (contributions minus benefit payments, refunds, and expenses) as a percentage of the market value of assets is -2.0% as of June 30, 2014, compared to -1.9% as of June 30, 2013. The increase in the employer and member contribution rates effective July 1, 2014, will improve the cash flow percentage, assuming all other experience emerges as expected.

Summary of Key Valuation Results

	2014	2013
Demographic Data for Plan Year Beginning July 1:		
Number of retirees and beneficiaries	7,747	7,489
Number of inactive vested members	1,509	1,500
Number of inactive non-vested members	661	563
Number of active members	10,305	10,138
Total payroll supplied by System, annualized	$557,222,917	$526,698,342
Statutory Contributions (% of Payroll) for Plan Year Beginning July 1:		
Member	11.75%	9.75%
Employer	12.75%	10.75%
Actuarially determined contribution rate for year beginning July 1	11.57%	10.26%*
Margin/(deficit)	1.18%	0.49%*
Assets:		
Market value	$2,090,977,056	$1,839,583,960
Actuarial value	1,940,473,504	1,762,321,644
Return on market value as determined by Segal	16.1%	13.4%
Return on actuarial value	12.6%	2.7%
Ratio of actuarial value to market value	92.8%	95.8%
Net cash flow % relative to market value	-2.0%	-1.9%
Actuarial Information:		
Normal cost %	10.63%	10.15%
Normal cost	$62,980,534	$56,751,722
Actuarial accrued liability	3,138,799,773	2,997,139,087
Unfunded actuarial accrued liability	1,198,326,269	1,234,817,443
Funded ratio	61.8%	58.8%
Effective amortization period	24 years	28 years*
GASB Information:		
Discount rate	8.00%	8.00%
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 total pension liability	66.6%	61.4%

**Reflects increases in member and employer contribution rates effective July 1, 2014.*

Summary of Key Valuation Results (continued)

	2014	2013
Gains/(Losses):		
Asset experience	$80,084,128	-$91,132,324
Liability experience	-8,882,399	-4,300,712
Benefit changes	0	0
Assumption/method changes	0	11,150,759
Total gain/(loss)	$71,201,729	-$84,282,277

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retirees, and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.

CHART 1

Member Population: 2005 – 2014

Year Ended June 30	Active Members	Inactive Vested Members	Inactive Non-vested Members	Retirees and Beneficiaries	Ratio of Actives to Retirees and Beneficiaries
2005	9,801	1,377	168	5,586	1.75
2006	9,585	1,409	143	5,893	1.63
2007	9,599	1,439	142	6,077	1.58
2008	9,561	1,459	229	6,317	1.51
2009	9,707	1,490	292	6,466	1.50
2010	9,907	1,472	331	6,672	1.48
2011	10,004	1,463	407	6,933	1.44
2012	10,014	1,483	468	7,151	1.40
2013	10,138	1,500	563	7,489	1.35
2014	10,305	1,509	661	7,747	1.33

Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 10,305 active members with an average age of 42.9 and 12.8 average years of service. The 10,138 active members in the prior valuation had an average age of 43.2 and 13.2 average years of service.

Inactive Members

In this year's valuation, there were 1,509 participants with a vested right to a deferred or immediate vested benefit.

In addition, there were 661 participants entitled to a return of their employee contributions.

These graphs show a distribution of active members by age and by years of service.

CHART 2

Distribution of Active Members by Age as of June 30, 2014

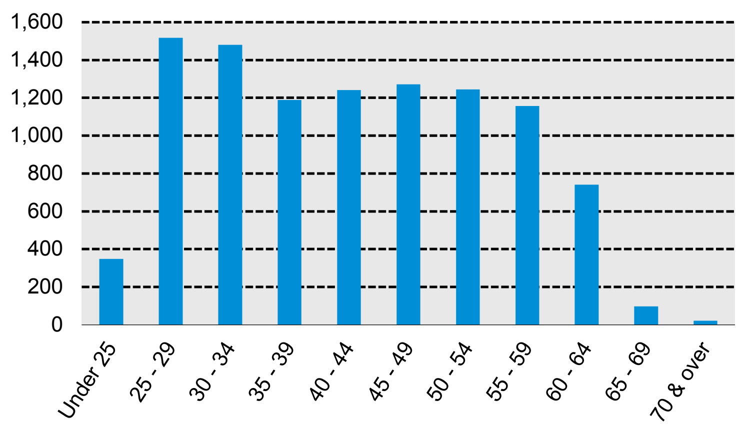
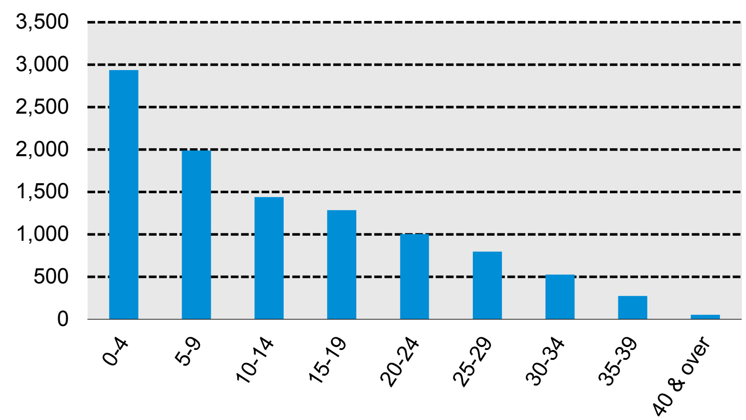


CHART 3

Distribution of Active Members by Years of Service as of June 30, 2014

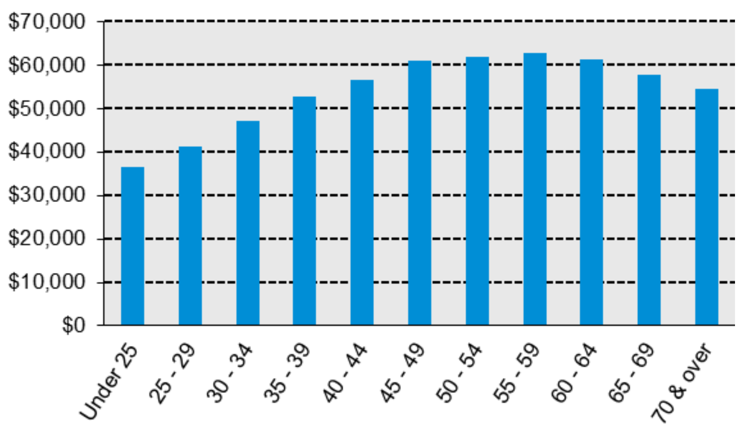


Distribution of Active Members by Age and Average Compensation

In this year's valuation, there were 10,305 active members with an average compensation of $54,073. The 10,138 active members in the prior valuation had an average compensation of $51,953.

CHART 4

Distribution of Active Members by Age and Average Compensation as of June 30, 2014



Retirees and Beneficiaries

As of July 1, 2014, 7,120 retirees and 627 beneficiaries were receiving total monthly benefits of $13,814,311. For comparison, in the previous valuation, there were 6,878 retirees and 611 beneficiaries receiving monthly benefits of $12,987,372.

These graphs show a distribution of the current retirees and beneficiaries based on their monthly amount and age, by type of pension.

CHART 5

Distribution of Retirees and Beneficiaries by Type and by Monthly Amount as of July 1, 2014

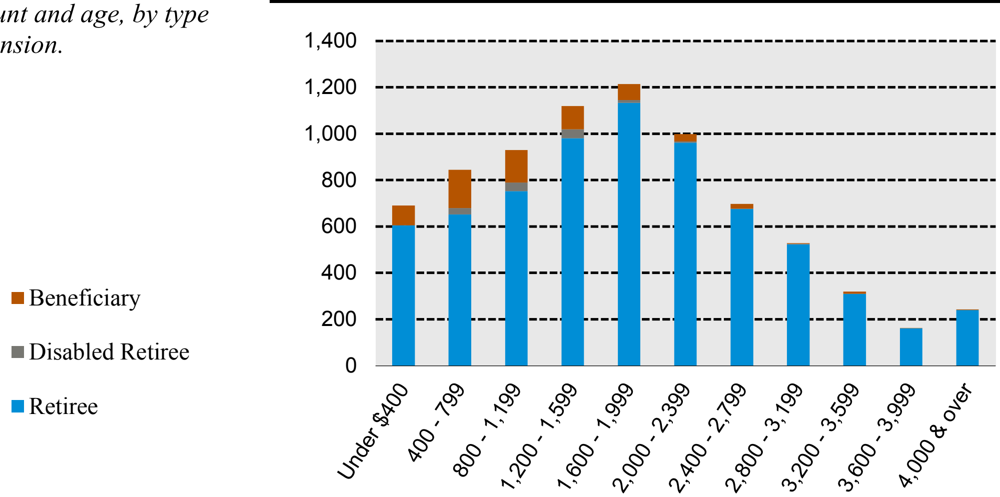
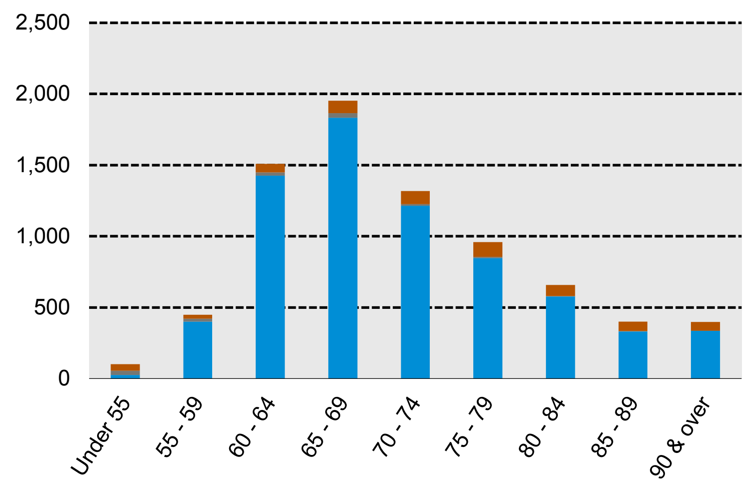


CHART 6

Distribution of Retirees and Beneficiaries by Type and by Age as of July 1, 2014

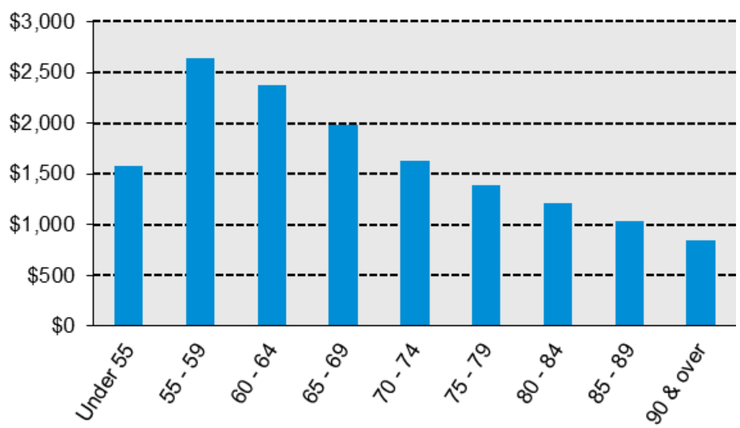


Distribution of Retirees and Beneficiaries by Age and Average Monthly Benefit Amount

As of July 1, 2014, the average monthly benefit amount among 7,120 retirees and 627 beneficiaries was $1,783. In the previous valuation, the average monthly benefit amount among 6,878 retirees and 611 beneficiaries was $1,722.

CHART 7

Distribution of Retirees and Beneficiaries by Age and Average Monthly Amount as of July 1, 2014



B. FINANCIAL INFORMATION

It is desirable to have level and predictable plan costs from one year to the next. For this reason, TFFR's Board utilizes an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date and the value from the prior year.

CHART 8

Determination of Actuarial Value of Assets for Years Ended June 30, 2014, and June 30, 2013

			2014		2013	
1.	Market value of assets available for benefits			$2,090,977,056		$1,839,583,960
2.	Calculation of unrecognized return*	Original Amount**	% Not Recognized		% Not Recognized	
	(a) Year ended June 30, 2014	$147,144,380	80%	$117,715,504		
	(b) Year ended June 30, 2013	87,575,593	60%	52,545,356	80%	$70,060,475
	(c) Year ended June 30, 2012	-159,245,999	40%	-63,698,400	60%	-95,547,599
	(d) Year ended June 30, 2011	219,705,461	20%	43,941,092	40%	87,882,184
	(e) Year ended June 30, 2010	74,336,281		0	20%	14,867,256
	(f) Total unrecognized return			$150,503,552		$77,262,316
3.	Actuarial value of assets (Current Assets): (1) – (2f)			$1,940,473,504		$1,762,321,644
4.	Actuarial value as a percent of market value: (3) ÷ (1)			92.8%		95.8%

* *Recognition at 20% per year over 5 years*

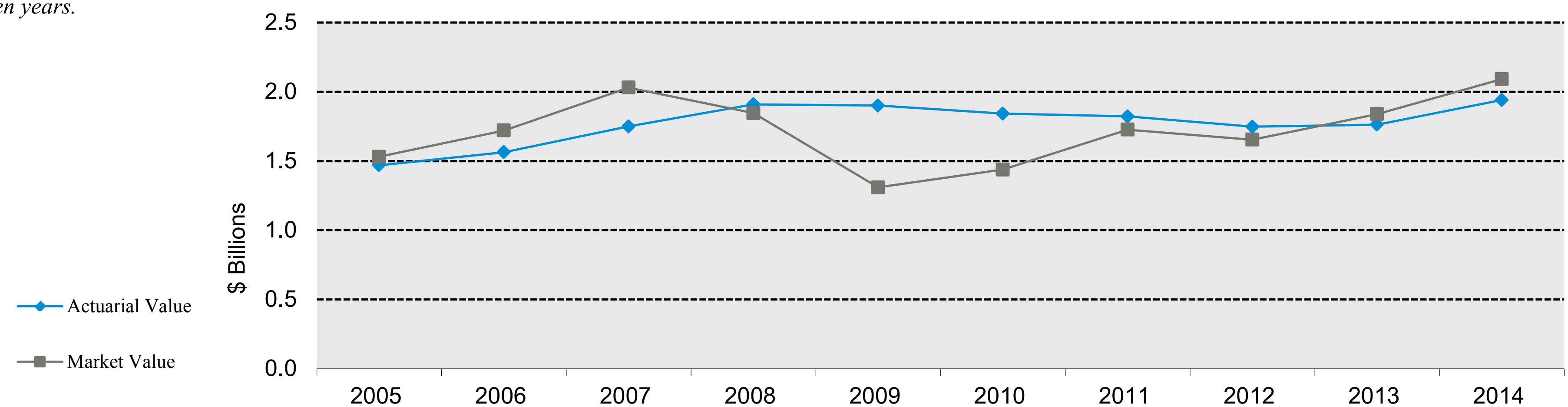
***Total return minus expected return on market value*

Both the actuarial value and market value of assets are representations of the TFFR's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the TFFR's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 9

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 2005 – 2014



Segal Consulting

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the TFFR's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00%. The actual rate of return on an actuarial basis for the Plan Year ended June 30, 2014, was 12.60%.

Since the actual return for the year was greater than the assumed return, the TFFR experienced an actuarial gain during the year ended June 30, 2014, with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10

Actuarial Value Investment Experience for Year Ended June 30, 2014

1.	Actual return	$219,419,167
2.	Average value of assets	1,741,687,990
3.	Actual rate of return: (1) ÷ (2)	12.60%
4.	Assumed rate of return	8.00%
5.	Expected return: (2) x (4)	$139,335,039
6.	Actuarial gain/(loss): (1) – (5)	$80,084,128

Because actuarial planning is long-term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last twenty years, including five-year, ten-year, fifteen-year and twenty-year averages.

Chart 11
Investment Return

Year Ended June 30	Market Value	Actuarial Value
1995	13.6%	9.1%
1996	15.6%	11.3%
1997	18.5%	12.6%
1998	13.2%	12.6%
1999	11.5%	13.5%
2000	11.6%	13.3%
2001	-7.6%	8.6%
2002	-8.6%	3.0%
2003	2.1%	0.6%
2004	18.9%	1.9%
2005	13.3%	3.3%
2006	14.6%	8.5%
2007	20.4%	14.4%
2008	-7.0%	11.6%
2009	-27.0%	1.7%
2010	13.9%	-0.5%
2011	23.5%*	1.4%
2012	-1.4%*	-1.4%
2013	13.4%*	2.7%
2014	16.1%*	12.6%
Average Returns		
Last 5 years:	12.7%	2.9%
Last 10 years:	6.8%	5.2%
Last 15 years:	5.5%	5.3%
Last 20 years:	7.6%	6.9%

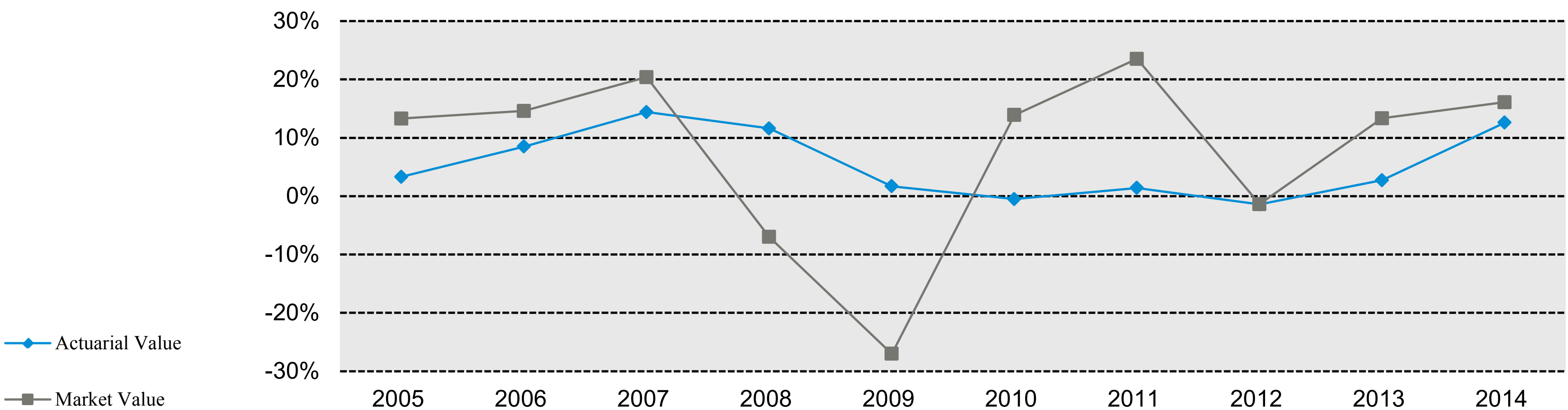
* *As determined by Segal.*

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2005 - 2014.

CHART 12

Market and Actuarial Rates of Return for Years Ended June 30, 2005 - 2014



Cash Flow

Cash flow is the difference between contributions and benefit payments, refunds, and expenses. Negative cash flow indicates that the payments made from the Fund exceed contributions made to the Fund.

The increase in the employer and member contribution rates effective July 1, 2014, will improve the cash flow percentage, assuming all other experience emerges as expected.

Chart 13

History of Cash Flow

		Disbursements or Expenditures						
Year Ending June 30,	Contributions[1]	Benefit Payments	Refunds	Administrative Expenses	Total	Net Cash Flow for the Year[2]	Market Value of Assets	Net Cash Flow as Percent of Market Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2005	$64,072,881	($84,498,130)	($2,733,407)	($2,086,849)	($89,318,386)	($25,245,505)	$1,530,194,427	-1.6%
2006	65,577,828	(91,818,092)	(2,697,308)	(1,484,591)	(95,999,991)	(30,422,163)	1,720,324,948	-1.8%
2007	66,362,099	(99,737,905)	(3,328,931)	(1,592,060)	(104,658,896)	(38,296,797)	2,029,777,412	-1.9%
2008	70,573,389	(106,456,334)	(5,500,476)	(1,639,521)	(113,596,331)	(43,022,942)	1,846,113,411	-2.3%
2009	74,380,980	(113,966,079)	(2,362,251)	(1,707,506)	(118,035,836)	(43,654,856)	1,309,716,730	-3.3%
2010	78,105,830	(124,472,154)	(2,557,240)	(1,902,796)	(128,932,190)	(50,826,360)	1,437,949,843	-3.5%
2011	84,923,250	(127,435,564)	(2,210,738)	(2,003,705)	(131,650,007)	(46,726,757)	1,726,179,317	-2.7%
2012	88,808,604	(135,250,568)	(2,479,194)	(1,596,976)	(139,326,738)	(50,518,134)	1,654,149,659	-3.1%
2013	115,849,348	(145,943,323)	(3,053,395)	(1,623,638)	(150,620,356)	(34,771,008)	1,839,583,960	-1.9%
2014	120,991,968	(158,350,355)	(3,908,921)	(1,586,045)	(163,845,321)	(42,853,353)	2,090,977,056	-2.0%

[1] Column (2) includes employee and employer contributions, as well as any purchased service credits during the year.

[2] Column (7) = Column (2) + Column (6).

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include, but are not limited to:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended June 30, 2014, amounted to $8,882,399, which is less than 0.3% of the actuarial accrued liability.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 14

Experience Due to Changes in Demographics for Year Ended June 30, 2014

1.	Turnover	-$3,199,333
2.	Retirement	4,469,339
3.	Deaths among retired members and beneficiaries	-672,722
4.	Salary/service increase for continuing actives	1,065,833
5.	New entrants	-6,483,726
6.	Miscellaneous	-4,061,790
7.	Total	-$8,882,399

C. DEVELOPMENT OF EMPLOYER COSTS

The amount of actuarially determined contribution is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution of 11.57% of payroll.

Effective July 1, 2013, the amortization period was set to 30 years, but will decline by one year in each subsequent valuation. As of July 1, 2014, the amortization period has declined to 29 years.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 15

Actuarially Determined Contribution

	Year Beginning July 1			
	2014		2013	
	Amount	% of Compensation	Amount	% of Compensation
1. Total normal contribution rate	$62,980,534**	10.63%	$56,751,722	10.15%
2. Less: member contribution rate	69,591,661	-11.75%	54,539,537	-9.75%
3. Employer normal contribution rate	-$6,611,127	-1.12%	$2,212,185	0.40%
4. Employer normal contribution rate, adjusted for timing*	-6,611,127	-1.12%	2,298,407	0.41%
5. Actuarial accrued liability	3,138,799,773		2,997,139,087	
6. Actuarial value of assets	1,940,473,504		1,762,321,644	
7. Unfunded actuarial accrued liability: (5) - (6)	1,198,326,269		1,234,817,443	
8. Payment on unfunded actuarial accrued liability, adjusted for timing	75,149,970	12.69%	55,075,563	9.85%***
9. Actuarially determined contribution (4) + (8)	$68,538,843	11.57%	$57,373,970	10.26%
10. Total payroll supplied by System, annualized	$557,222,917		$526,698,342	
11. Projected annual payroll for fiscal year beginning July 1	$592,269,452		$559,379,867	

* *Contributions are assumed to be paid at the middle of every month.*

** *Reflects the adjustment for middle of month timing.*

*** *Reflects the actuarial present value of the increased statutory contributions scheduled to occur July 1, 2014.*

The actuarially determined contribution as of July 1, 2014, is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. It includes all changes affecting future costs, adopted benefit changes, actuarial gains and losses, and changes in the actuarial assumptions.

Reconciliation of Actuarially Determined Contribution

The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

The chart reconciles the actuarially determined contribution from the prior valuation to the amount determined in this valuation.

CHART 16

Reconciliation of Actuarially Determined Contribution from July 1, 2013 to July 1, 2014

		July 1, 2014		**July 1, 2013**
1. Prior valuation		10.26%		9.49%
2. Increases/(decreases) due to:				
a. Change in amortization period (decrease from 30 years to 29 years remaining as of July 1, 2014)	0.00%		-0.23%	
b. Change in covered payroll and normal cost	-0.27%		-0.20%	
c. Employer contributions received at 10.75% rather than 10.26% for FY2014 or 9.49% for FY 2013	-0.05%		-0.14%	
d. Liability experience	0.25%		0.05%	
e. Investment experience	-0.62%		1.02%	
f. Legislative changes	0.00%		0.00%	
g. Change in actuarial cost method	0.00%		0.27%	
h. Adjustment to remove present value of increased employer statutory contributions from amortization payment	2.00%		0.00%	
i. Total		1.31%		0.77%
3. Current valuation (1. + 2.i.)		11.57%		10.26%
4. Statutory employer contribution rate		12.75%		10.75%
5. Margin available [contribution sufficiency/(deficiency)] (4. – 3.)		1.18%		0.49%

D. ADDITIONAL INFORMATION

Critical information to assess the funding progress is the historical comparison of the actuarially determined contribution (annual required contribution prior to July 1, 2014) to the actual contributions. Chart 17 below presents a graphical representation of this information for TFFR.

The other critical piece of information regarding TFFR's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Chart 18 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

The details regarding the calculations of these values may be found in Section 4.

CHART 17
Actuarially Determined Versus Actual Employer Contributions, Years Ended June 30

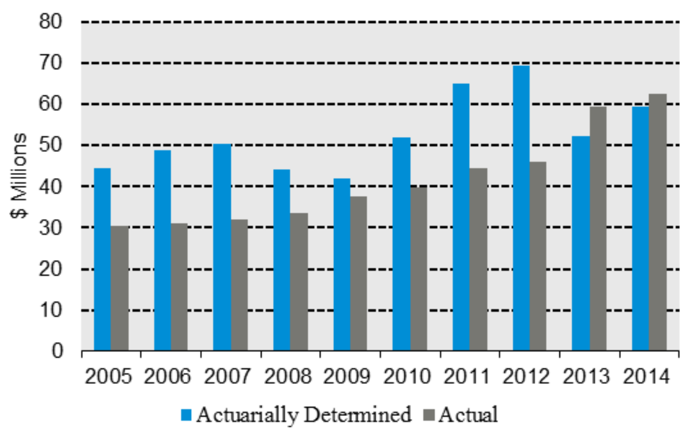
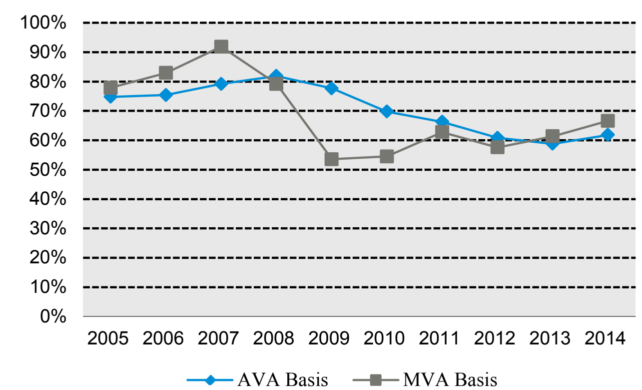


CHART 18
Funded Ratio, Years Ended June 30



Membership Data

Membership data was provided on electronic files sent by the RIO staff. Data for active members includes sex, birth date, service, salary for the prior fiscal year, and accumulated contributions. Data for inactive members was similar, but also includes the members' unreduced benefit. For retired members, data includes status (service retiree, disabled retiree or beneficiary), sex, birth date, pension amount, date of retirement, form of payment, and beneficiary sex and birth date if applicable.

While not verifying the correctness of the data at the source, we performed various tests to ensure the internal consistency of the data and its overall reasonableness.

Membership statistics are summarized in Exhibit A. Exhibit B summarizes certain active member data, and the age/service distribution of active members among tiers is shown in Exhibit C. Exhibit D-1 and Exhibit D-2 show the distribution of retirees by option and by benefit amount. Exhibit E shows a reconciliation of the member data from last year’s valuation to this year’s valuation.

The number of active members increased by 1.6% since last year, from 10,138 to 10,305. Note that normally the actual number of members employed during the year will be somewhat higher than the valuation count, since the July 1 count excludes most June and July retirees but does not include new teachers joining the system for the next school year.

Total payroll increased 5.8% since last year. For all comparative purposes, payroll is the amount supplied by the RIO staff (i.e., the 2013-2014 member pay), annualized. However, this figure is increased by one year’s assumed pay increase to determine the member’s rate of pay (and thus, total projected payroll) at July 1, 2014. Pay is assumed to change only at the beginning of a school/fiscal year.

Average pay increased by 4.1%, from $51,953 to $54,073. This includes the impact of replacing more highly paid members who retire with new teachers. The average increase in salary for the 9,296 continuing members (members active in both this valuation and the preceding valuation) was 6.4%.

The average age of active members decreased from 43.2 years to 42.9 years, and their average service decreased from 13.2 years to 12.8 years.

The table below shows additional information about the active membership this year and last year. Tier 1 Grandfathered members are those who had 65 points as of June 30, 2013, or were at least age 55 and vested. Current Tier 1 members that did not meet these criteria are considered Tier 1 Non-grandfathered members. Tier 2 members are those hired or rehired after June 30, 2008. All new members in future years will enter as Tier 2 members, so the number will increase over time. The Tier 1 Grandfathered and Non-grandfathered population will decrease each year as members leave due to retirement, termination, death, and disability.

Active Statistics

	July 1, 2014	July 1, 2013*
Plan Eligibility		
a. Tier 1 Grandfathered	3,240	3,627
b. Tier 1 Non-grandfathered	3,395	3,474
c. Tier 2	3,670	3,037
d. Total	10,305	10,138
Benefit Eligibility		
a. Non-Vested	2,899	2,673
b. Vested	5,428	5,432
c. Early Retirement	938	967
d. Normal Retirement	1,040	1,066
e. Total	10,305	10,138

* *Number of Tier 1 Grandfathered and Non-grandfathered members is estimated based on the July 1, 2013 census data and eligibility requirements specified above.*

In addition, this table shows the number of members who are non-vested, those who are vested but not eligible for retirement, those who are eligible only for an early retirement (reduced) benefit, and those eligible for a normal (unreduced) benefit. As of the valuation date, 1,978 members were eligible for either reduced or unreduced retirement, a decrease over last year's figure of 2,033.

EXHIBIT A
Member Data

Member Data	July 1, 2014	July 1, 2013
1. Active members		
a. Males	2,656	2,599
b. Females	7,649	7,539
c. Total members	10,305	10,138
d. Total payroll supplied by System, annualized	$557,222,917	$526,698,342
e. Average salary	$54,073	$51,953
f. Average age	42.9	43.2
g. Average service	12.8	13.2
h. Total contributions with interest	$698,157,822	$671,139,304
i. Average contribution with interest	$67,749	$66,200
2. Vested inactive members		
a. Number	1,509	1,500
b. Total annual deferred benefits	$10,207,883	$9,681,777
c. Average annual deferred benefit	$6,765	$6,455
d. Average age	49.6	49.2
3. Non-vested inactive members		
a. Number	661	563
b. Employee contributions with interest due	$3,084,613	$2,229,664
c. Average refund due	$4,667	$3,960
d. Average age	38.3	38.6
4. Service retirees		
a. Number	6,991	6,754
b. Total annual benefits	$155,409,403	$144,956,155
c. Average annual benefit	$22,230	$21,462
d. Average age	70.9	70.8
5. Disabled retirees		
a. Number	129	124
b. Total annual benefits	$1,886,877	$1,766,281
c. Average annual benefit	$14,627	$14,244
d. Average age	61.3	61.0
6. Beneficiaries		
a. Number	627	611
b. Total annual benefits	$8,475,439	$8,046,021
c. Average annual benefit	$13,517	$13,169
d. Average age	73.6	73.5

EXHIBIT B

Historical Summary of Active Member Data

	Active Members		Total Payroll Supplied by System, Annualized		Average Salary			
Year Ending June 30,	Number	Percent Increase/ (Decrease)	Amount in $ Millions	Percent Increase/ (Decrease)	$ Amount	Percent Increase/ (Decrease)	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1995	9,663	0.1%	$268.7	2.4%	$27,803	2.3%	42.6	13.4
1996	9,797	1.4%	281.2	4.7%	28,708	3.3%	42.9	13.6
1997	10,010	2.2%	294.1	4.6%	29,382	2.3%	43.4	14.0
1998	9,896	-1.1%	298.4	1.5%	30,156	2.6%	43.5	14.0
1999	10,046	1.5%	314.6	5.4%	31,318	3.9%	44.0	14.4
2000	10,025	-0.2%	323.0	2.7%	32,223	2.9%	43.9	14.1
2001	10,239	2.1%	342.2	5.9%	33,421	3.7%	44.4	14.4
2002	9,931	-3.0%	348.1	1.7%	35,052	4.9%	44.5	14.4
2003	9,916	-0.2%	367.9	5.7%	37,105	5.9%	44.8	14.6
2004	9,826	-0.9%	376.5	2.3%	38,321	3.3%	44.9	14.7
2005	9,801	-0.3%	386.6	2.7%	39,447	2.9%	44.9	14.7
2006	9,585	-2.2%	390.1	0.9%	40,703	3.2%	44.8	14.6
2007	9,599	0.1%	401.3	2.9%	41,810	2.7%	44.7	14.5
2008	9,561	-0.4%	417.7	4.1%	43,684	4.5%	44.6	14.4
2009	9,707	1.5%	440.0	5.3%	45,327	3.8%	44.5	14.3
2010	9,907	2.1%	465.0	5.7%	46,937	3.6%	44.2	14.0
2011	10,004	1.0%	488.8	5.1%	48,857	4.1%	43.9	13.8
2012	10,014	0.1%	505.3	3.4%	50,458	3.3%	43.7	13.7
2013	10,138	1.2%	526.7	4.2%	51,953	3.0%	43.2	13.2
2014	10,305	1.6%	557.2	5.8%	54,073	4.1%	42.9	12.8

EXHIBIT C

Members in Active Service as of June 30, 2014
By Age, Years of Service, and Average Compensation

		Years of Credited Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	348	348	- -	- -	- -	- -	- -	- -	- -	- -
	$36,396	$36,396								
25 - 29	1,517	1,195	322	- -	- -	- -	- -	- -	- -	- -
	41,375	40,308	$45,337	- -	- -	- -	- -	- -	- -	- -
30 - 34	1,480	482	780	217	1	- -	- -	- -	- -	- -
	47,056	41,204	48,663	$54,167	$70,913	- -	- -	- -	- -	- -
35 - 39	1,188	275	303	460	150	- -	- -	- -	- -	- -
	52,802	43,894	51,427	56,108	61,768	- -	- -	- -	- -	- -
40 - 44	1,241	207	192	249	479	112	2	- -	- -	- -
	56,563	44,969	53,179	57,413	61,083	$62,049	$85,458	- -	- -	- -
45 - 49	1,272	135	149	181	260	384	160	3	- -	- -
	61,030	46,993	52,583	57,572	62,833	65,982	69,617	$72,545	- -	- -
50 - 54	1,245	125	98	132	161	217	361	149	2	- -
	61,860	46,972	52,897	56,099	62,336	65,255	67,538	65,826	$84,864	- -
55 - 59	1,156	84	79	96	139	169	186	275	128	- -
	62,729	49,771	50,928	54,112	62,516	64,462	65,400	67,301	69,219	- -
60 - 64	740	67	58	87	75	109	80	88	138	38
	61,228	50,091	47,391	55,534	57,964	63,012	66,218	66,763	67,762	$69,300
65 - 69	97	14	5	17	18	9	6	10	5	13
	57,873	47,757	43,450	51,820	55,419	57,655	59,608	66,068	62,537	76,885
70 & over	21	5	2	2	1	3	2	2	1	3
	54,422	35,117	57,961	41,838	52,376	62,899	51,853	64,110	52,809	80,623
Total	10,305	2,937	1,988	1,441	1,284	1,003	797	527	274	54
	$54,073	$41,767	$49,533	$55,986	$61,569	$64,723	$67,270	$66,789	$68,418	$71,755

EXHIBIT D-1

Schedule of Annuitants by Type of Benefit as of July 1, 2014

Type of Benefits/ Form of Payment	Number	Annual Benefits Amount	Average Monthly Benefits
Service:			
Straight Life	3,014	$57,177,132	$1,581
100% J&S	2,860	73,296,657	2,136
50% J&S	607	15,188,590	2,085
5 Years C&L	21	292,694	1,161
10 Years C&L	175	3,238,626	1,542
20 Years C&L	91	2,045,920	1,874
Level	223	4,169,784	1,558
Subtotal:	6,991	$155,409,403	$1,852
Disability:			
Straight Life	105	$1,578,754	$1,253
100% J&S	13	164,515	1,055
50% J&S	7	92,932	1,106
5 years C&L	2	25,253	1,052
10 Years C&L	0	0	0
20 Years C&L	2	25,423	1,059
Level	0	0	0
Subtotal:	129	$1,886,877	$1,219
Beneficiaries:			
Straight Life	612	$8,310,307	$1,132
5 Years Certain Only	2	42,878	1,787
10 Years Certain Only	9	70,362	652
20 Years Certain Only	4	51,891	1,081
Subtotal:	627	$8,475,439	$1,126
Total:	7,747	$165,771,719	$1,783

EXHIBIT D-2

Schedule of Annuitants by Monthly Benefit as of July 1, 2014

Monthly Benefit Amount	Number of Members	Female	Male	Average Service
Under $200	228	167	61	6.46
200 - 399	462	356	106	12.16
400 - 599	443	347	96	17.36
600 - 799	402	300	102	21.65
800 - 999	408	295	113	23.53
1,000 - 1,199	522	388	134	26.56
1,200 - 1,399	532	364	168	28.35
1,400 - 1,599	587	383	204	29.56
1,600 - 1,799	615	406	209	29.43
1,800 - 1,999	599	393	206	30.46
2,000 - 2,199	537	363	174	30.45
2,200 - 2,399	462	284	178	31.35
2,400 - 2,599	377	244	133	32.39
2,600 - 2,799	320	199	121	33.21
2,800 - 2,999	301	179	122	33.22
3,000 - 3,199	228	145	83	34.14
3,200 - 3,399	178	101	77	34.98
3,400 - 3,599	141	79	62	34.09
3,600 - 3,799	101	50	51	35.23
3,800 - 3,999	62	34	28	35.89
4,000 & over	242	103	139	36.47
Total:	7,747	5,180	2,567	27.47

EXHIBIT E

Reconciliation of Member Data by Status for the Year Ending June 30, 2014

	Active Members	Vested Terminated Members	Non-Vested Terminated Members	Service Retirees	Disabled Retirees	Beneficiaries	Total
A. Number as of July 1, 2013	10,138	1,500	563	6,754	124	611	19,690
B. Additions and new hires	918	0	0	0	0	0	918
C. Participant movement							
1. Retirement	-363	-44	0	407	0	0	0
2. Disability	-4	-3	0	0	7	0	0
3. Died with beneficiary	-1	-3	0	-40	0	46	2
4. Died without beneficiary	-5	-2	-1	-127	-1	-31	-167
5. Terminated vested	-155	155	0	0	0	0	0
6. Terminated non-vested	-165	0	165	0	0	0	0
7. Refunds	-147	-40	-33	0	0	0	-220
8. Rehired as active	91	-55	-32	-3	-1	0	0
9. Expired benefits	0	0	0	0	0	0	0
10. New alternate payee	0	0	0	0	0	1	1
11. Data corrections	-2	1	-1	0	0	0	-2
D. Number as of June 30, 2014	10,305	1,509	661	6,991	129	627	20,222

EXHIBIT F

Statement of Change in Plan Net Assets for Year Ended June 30, 2014

	As of June 30	
	2014	**2013**
A. Assets available at beginning of year	$1,839,583,960	$1,654,149,659
B. Revenue for the year		
1. Contributions		
a. Employee contributions	$56,572,083	$53,824,557
b. Employer contributions	62,355,146	59,300,720
c. Prior year corrections	18,064	52,140
d. Purchased service credit	2,034,289	2,641,019
e. Interest and penalties	12,386	30,912
f. Total	$120,991,968	$115,849,348
2. Income		
a. Interest, dividends, and other income	$36,744,024	$41,018,935
b. Investment expenses	-7,257,140	-6,010,000
c. Net	$29,486,884	$35,008,935
3. Net realized and unrealized gains/(losses)	264,759,565	185,196,374
4. Total revenue: (1f) + (2c) + (3)	$415,238,417	$336,054,657
C. Expenditures for the year		
1. Benefits and refunds		
a. Refunds	$3,908,921	$3,053,395
b. Regular annuity benefits	157,529,892	145,079,333
c. Partial lump-sum benefits paid	820,463	863,990
d. Total	$162,259,276	$148,996,718
2. Administrative and miscellaneous expenses	1,586,045	1,623,638
3. Total expenditures	$163,845,321	$150,620,356
D. Increase/(decrease) in net assets: (B4 – C3)	$251,393,096	$185,434,301
E. Value of assets at end of year: (A + D)	$2,090,977,056	$1,839,583,960

EXHIBIT G

Statement of Plan Net Assets (Assets at Market or Fair Value)

	As of June 30	
	2014	**2013**
1. Cash and cash equivalents (operating cash)	$17,012,740	$16,044,045
2. Receivables:		
a. Member and employer contributions	$16,233,852	$15,648,020
b. Investment income	7,457,808	7,657,195
c. Miscellaneous receivables	4,362	5,172
d. Total receivables	$23,696,022	$23,310,387
3. Investments		
a. Invested cash	$20,045,640	$24,369,601
b. Domestic equities	457,923,675	397,390,800
c. International equities	631,143,702	553,882,067
d. Domestic fixed income	374,882,829	307,517,259
e. International fixed income	103,794,657	85,289,832
f. Real assets	369,078,739	340,442,941
g. Private equity	97,357,862	94,185,760
h. Total investments	$2,054,227,104	$1,803,078,260
4. Due from other funds	$0	$616
5. Equipment & software (net of depreciation)	$0	$0
6. Total assets: (1) + (2d) + (3h) + (4) + (5)	$2,094,935,866	$1,842,433,308
7. Liabilities		
a. Accounts payable	$3,320,810	$2,183,134
b. Accrued expenses	631,740	658,494
c. Due to other funds	6,260	7,720
d. Total liabilities	$3,958,810	$2,849,348
8. Total market value of assets available for benefits: (6) – (7d)	$2,090,977,056	$1,839,583,960

EXHIBIT G (continued)

Statement of Plan Net Assets (Assets at Market or Fair Value)

	As of June 30	
	2014	**2013**
9. Asset allocation (investments)		
a. Invested cash	1.0%	1.4%
b. Domestic equities	22.3%	22.0%
c. International equities	30.7%	30.7%
d. Domestic fixed income	18.2%	17.1%
e. International fixed income	5.1%	4.7%
f. Real estate	18.0%	18.9%
g. Private equity	4.7%	5.2%
h. Total investments	100.0%	100.0%

EXHIBIT H

Development of Unfunded Actuarial Accrued Liability

	Year Ending June 30			
	2014		2013	
1. Unfunded actuarial accrued liability at beginning of year		$1,234,817,443		$1,123,789,515
2. Normal cost at beginning of year		56,751,722		52,667,248
3. Total contributions		120,991,968		115,849,348
4. Interest on:				
(a) Unfunded actuarial accrued liability and normal cost	$103,325,533		$94,116,541	
(b) Total contributions	4,374,732		4,188,790	
(c) Total interest: (4a) – (4b)		$98,950,801		$89,927,751
5. Expected unfunded actuarial accrued liability: (1) + (2) – (3) + (4c)		$1,269,527,998		$1,150,535,166
6. Changes due to (gain)/loss from:				
(a) Investments	-$80,084,128		$91,132,324	
(b) Demographics	8,882,399		4,300,712	
(c) Total changes due to (gain)/loss: (6a) + (6b)		-71,201,729		95,433,036
7. Change due to plan amendments		0		0
8. Change in actuarial cost method		0		-11,150,759
9. Unfunded actuarial accrued liability at end of year: (5) + (6c) + (7) + (8)		$1,198,326,269		$1,234,817,443

EXHIBIT I

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability For Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability For Pensioners:	The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the Actuarially Determined Contribution (ADC).
Actuarial Gain or Actuarial Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., TFFR's assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) b. Multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and c. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.
Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
Actuarial Value of Assets:	The value of the Fund’s assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under GASB. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Fund is calculated including:

(a) Investment return - the rate of investment yield that the Fund will earn over the long-term future;

(b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates - the rate or probability of retirement at a given age;

(d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;

(e) Salary increase rates - the rates of salary increase due to inflation and productivity growth.

Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.
Funding Period or Amortization Period:	The term "Funding Period" is used in two ways. First, it is the period used in calculating the Amortization Payment as a component of the ADC. Second, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB:	Governmental Accounting Standards Board.
GASB 67 and GASB 68:	Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment Return:	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Margin:	The difference, whether positive or negative, between the statutory employer contribution rate and the Actuarially Determined Contribution (ADC) as defined by GASB.
Net Pension Liability:	The Net Pension Liability is equal to Total Pension Liability minus Plan Fiduciary Net Position.
Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability, or retirement.

Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount, or in relation to covered payroll, if the actuarial assumptions are realized.
Plan Fiduciary Net Position:	Market value of assets.
Total Pension Liability:	The actuarial accrued liability based on the blended discount rate as described in GASB 67/68.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1.	Pensioners as of the valuation date (including 627 beneficiaries in pay status)		7,747
2.	Members inactive during year ended June 30, 2014, with vested rights		1,509
3.	Members active during the year ended June 30, 2014		10,305
	Fully vested	7,406	
	Not vested	2,899	
4.	Other non-vested inactive members as of June 30, 2014		661

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability			
1. Active members			
a. Retirement benefits	$1,848,957,667	$458,847,766	$1,390,109,901
b. Disability benefits	28,034,138	11,295,948	16,738,190
c. Death benefits	18,844,315	7,605,309	11,239,006
d. Withdrawal benefits	119,626,294	139,551,250	-19,924,956
e. Total	$2,015,462,414	$617,300,273	$1,398,162,141
2. Inactive vested members	75,906,799	--	75,906,799
3. Inactive non-vested members	3,084,613	--	3,084,613
4. Retirees and beneficiaries	1,661,646,220	--	1,661,646,220
5. Total	$3,756,100,046	$617,300,273	$3,138,799,773
B. Determination of Unfunded Actuarial Accrued Liability			
1. Actuarial accrued liability			$3,138,799,773
2. Actuarial value of assets			1,940,473,504
3. Unfunded actuarial accrued liability: (1) – (2)			$1,198,326,269

EXHIBIT II

Actuarial Balance Sheet

	July 1, 2014	July 1, 2013
A. Assets		
1. Current Assets		
a. Market Value	$2,090,977,056	$1,839,583,960
b. Adjustment for actuarial value	-150,503,552	-77,262,316
c. Actuarial value of assets	$1,940,473,504	$1,762,321,644
2. Actuarial present value of future contributions		
a. Member contributions	$721,502,103	$661,739,495*
b. Employer normal costs	-104,201,830	-89,929,993
c. Unfunded actuarial accrued liability	1,198,326,269	1,234,817,443
d. Total	$1,815,626,542	$1,806,626,945
3. Total (lc + 2d)	$3,756,100,046	$3,568,948,589
B. Liabilities (Present Value of Projected Benefits)		
1. Retirees and beneficiaries	$1,661,646,220	$1,551,654,631
2. Inactive members	78,991,412	74,041,451
3. Active members	2,015,462,414	1,943,252,507
4. Total	$3,756,100,046	$3,568,948,589

**Reflects member contribution rate increase from 9.75% to 11.75% effective July 1, 2014.*

EXHIBIT III

Comparison of Employer Contribution to Actuarially Determined Contribution

	Actuarially Determined Contribution (ADC)[1]		Actual Employer Contribution[2]		Percentage of ADC Contributed
Fiscal Year	% of Payroll[3]	Amount[4]	% of Payroll	Amount	[(5)/(3)]
(1)	(2)	(3)	(4)	(5)	(6)
2005	11.34%	$44,471,740	7.75%	$30,388,265	68.3%
2006	12.12%	48,747,189	7.75%	31,170,851	63.9%
2007	12.29%	50,532,462	7.75%	31,865,466	63.1%
2008	10.15%	44,114,585	7.75%	33,683,550	76.4%
2009	9.24%	41,986,174	8.25%	37,487,655	89.3%
2010	10.78%	52,053,217	8.25%	39,836,646	76.5%
2011	12.79%	65,112,696	8.75%	44,545,433	68.4%
2012	13.16%	69,373,794	8.75%	46,126,193	66.5%
2013	9.49%[5]	52,396,153	10.75%	59,352,860	113.3%
2014	10.26%	59,530,152	10.75%	62,373,210	104.8%

1 Prior to FY 2014, the ADC is the same as the GASB ARC determined under GASB 25.

2 Includes prior year corrections.

3 The ADC for each fiscal year is based on the actuarial valuation as of the beginning of the year. Therefore, the FY 2014 ADC is based on the July 1, 2013 valuation. The ADC is defined as the contribution rate required to pay the employer normal cost and to amortize the unfunded actuarial accrued liability over the closed 30-year period that began July 1, 2013 as a level percentage of payroll. For FY 2005 and prior years, the unfunded actuarial accrued liability is amortized over a 20-year period as a level dollar amount.

4 The dollar amount of the ADC is based on actual payroll for the year. The FY 2014 ADC shown above differs from the estimated dollar amount shown in the July 1, 2013 actuarial valuation report because of differences between estimated and actual FY 2014 payroll.

5 The FY 2013 ADC reflects the actuarial present value of the increased statutory contributions scheduled to occur July 1, 2014.

EXHIBIT IV

Schedule of Employer Contributions

Fiscal Year	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	59,530,152	62,355,146	(2,824,994)	580,053,235	10.75%

EXHIBIT V

Schedule of Funding Progress

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded/ Accrued Liability (UAAL) (3) – (2)	Funded Ratio (2) / (3)	Total Payroll Supplied by System, Annualized	UAAL as a % of Compensation (4) / (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
07/01/2005	$1,469,700,000	$1,965,200,000	$495,500,000	74.8%	$386,600,000	128.2%
07/01/2006	1,564,000,000	2,073,900,000	509,900,000	75.4%	390,100,000	130.7%
07/01/2007	1,750,100,000	2,209,300,000	459,200,000	79.2%	401,300,000	114.4%
07/01/2008	1,909,500,000	2,330,600,000	421,200,000	81.9%	417,700,000	100.8%
07/01/2009	1,900,327,834	2,445,896,710	545,568,876	77.7%	439,986,705	124.0%
07/01/2010	1,841,960,220	2,637,165,045	795,204,825	69.8%	465,007,110	171.0%
07/01/2011	1,822,598,871	2,749,751,755	927,152,884	66.3%	488,764,292	189.7%
07/01/2012	1,748,080,771	2,871,870,286	1,123,789,515	60.9%	505,285,069	222.4%
07/01/2013	1,762,321,644	2,997,139,087	1,234,817,443	58.8%	526,698,342	234.4%
07/01/2014	1,940,473,504	3,138,799,773	1,198,326,269	61.8%	557,222,917	215.1%

Note: Numbers for 7/1/2005 – 7/1/2008 valuation dates are rounded

Exhibit VI

Determination of Contribution Sufficiency

	July 1, 2014	
A. Statutory Contributions	**Percent of Payroll**	**Dollar Amount**
1. Member contributions	11.75%	$69,591,661
2. Employer contributions	12.75%	75,514,355
3. Total	24.50%	$145,106,016
B. Actuarially Determined Contribution	**Percent of Payroll**	**Dollar Amount**
1. Gross normal cost:		
(a) Retirement	7.66%	$45,360,076
(b) Disability	0.17%	1,038,290
(c) Death	0.12%	707,309
(d) Deferred termination benefit and refunds	2.28%	13,512,225
(e) Total normal cost as of July 1	10.23%	60,617,900
2. Gross normal cost, adjusted for timing	10.63%	62,980,534
3. Less member contribution rate	11.75%	69,591,661
4. Employer normal cost rate: (2) – (3)	-1.12%	-6,611,127
5. Unfunded actuarial accrued liability rate, adjusted for timing	12.69%	75,149,970
6. Total: (4) + (5)	11.57%	68,538,843
C. Contribution Sufficiency / (Deficiency): (A.2) – (B.6)	1.18%	$6,975,512
Projected annual payroll for fiscal year beginning on the valuation date		592,269,452

EXHIBIT VII

Solvency Test

	July 1, 2014	July 1, 2013
1. Actuarial accrued liability (AAL)		
a. Active member contributions	$698,157,822	$671,139,304
b. Retirees and beneficiaries	1,661,646,220	1,551,654,631
c. Active and inactive members (employer financed)	778,995,731	774,345,152
d. Total	$3,138,799,773	$2,997,139,087
2. Actuarial value of assets	1,940,473,504	1,762,321,644
3. Cumulative portion of AAL covered		
a. Active member contribution	100.0%	100.0%
b. Retirees and beneficiaries	74.8%	77.6%
c. Active and inactive members (employer financed)	0.0%	0.0%

EXHIBIT VIII

Net Pension Liability

The components of the net pension liability at June 30, 2014, were as follows:

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 the total pension liability	66.6%

The net pension liability was measured as of June 30, 2014, and is determined based on the total pension liability from the July 1, 2014, actuarial valuation.

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 active members, mortality rates were based on the post-retirement mortality rates multiplied by 60% for males and 40% for females. For inactive members and healthy retirees, mortality rates were based on 80% of GRS Table 378 and 75% of GRS Table 379. For disabled retirees, mortality rates were 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 valuations.

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 this 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.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of June 30, 2014, and June 30, 2013, 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 IX

Schedules 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, including purchased service credit and interest	$ 64,419,885
Contributions – employee	56,572,083
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 X
Summary of Assumptions and Methods

Investment Return Rate: 8.00% per annum, compounded annually, equal to an assumed 3.00% inflation rate plus a 5.65% real rate of return, less 0.65% for expected investment and administrative expenses. (Adopted July 1, 1990; allocation among inflation, real rate of return, and expenses modified effective July 1, 2010.)

Mortality Rates:

Post-Retirement Non-Disabled*: GRS tables as shown below. (Adopted effective July 1, 2010)
i. 80% of GRS Table 378
ii. 75% of GRS Table 379

Post-Retirement Disabled*: RP- 2000 Disabled-Life tables for Males and Females multiplied by 80% and 95% respectively. (Adopted effective July 1, 2010)

Number of Deaths per 100				
	Male Annuitants		Female Annuitants	
Age	Nondisabled	Disabled	Nondisabled	Disabled
20	0.044	1.806	0.023	0.708
25	0.057	1.806	0.023	0.708
30	0.069	1.806	0.028	0.708
35	0.073	1.806	0.039	0.708
40	0.092	1.806	0.057	0.708
45	0.136	1.806	0.078	0.708
50	0.222	2.318	0.115	1.096
55	0.381	2.835	0.283	1.572
60	0.358	3.363	0.354	2.075
65	0.457	4.014	0.327	2.662
70	1.198	5.007	0.672	3.575

Active Mortality*: The non-disabled post-retirement mortality rates multiplied by 60% for males and 40% for females. (Adopted effective July 1, 2010.)

*The mortality tables above reasonably reflect the projected mortality experience of the Fund as of the measurement date. As of the most recent experience study, the ratio of actual to the expected deaths was 118% for males and 115% for females (116% and 121% for males and females for post-disabled mortality). This provides a sufficient margin for future mortality improvement.

Retirement Rates:

The following rates of retirement are assumed for members eligible to retire. (Adopted effective July 1, 2010.)

	Unreduced Retirement *		Reduced Retirement	
Age	**Male**	**Female**	**Male**	**Female**
50	25.00%	15.00%		
51	25.00%	15.50%		
52	25.00%	16.00%		
53	25.00%	16.50%		
54	25.00%	17.00%		
55	20.00%	17.50%	1.50%	1.50%
56	20.00%	18.00%	1.50%	1.50%
57	20.00%	18.50%	1.50%	1.50%
58	20.00%	19.00%	1.50%	1.50%
59	20.00%	19.50%	1.50%	1.50%
60	20.00%	20.00%	4.00%	3.00%
61	20.00%	20.00%	4.00%	3.00%
62	45.00%	35.00%	9.00%	8.00%
63	35.00%	30.00%	7.00%	12.00%
64	35.00%	30.00%	10.00%	15.00%
65	40.00%	30.00%		
66	30.00%	30.00%		
67	30.00%	30.00%		
68	30.00%	30.00%		
69	30.00%	30.00%		
70	25.00%	25.00%		
71	25.00%	25.00%		
72	25.00%	25.00%		
73	25.00%	25.00%		
74	25.00%	25.00%		
75	100.00%	100.00%		

* If a member reaches eligibility for unreduced retirement before age 65 under the rule of 85 (Grandfathered Tier 1) or the Rule of 90/Age 60 (Non-grandfathered Tier 1 and Tier 2), 10% is added to the rate just at the age the member becomes first eligible for an unreduced retirement benefit.

Disability Rates: Shown below for selected ages. (Adopted effective July 1, 2010.)

Age	Rates
20	0.011%
25	0.011%
30	0.011%
35	0.011%
40	0.033%
45	0.055%
50	0.088%
55	0.154%
60	0.297%

Termination Rates: Termination rates based on service, for causes other than death, disability, or retirement. (Adopted effective July 1, 2010.)

Termination Rates*		
Service	**Male**	**Female**
0	33.00%	30.00%
1	15.00%	15.00%
2	12.00%	10.00%
3	9.00%	8.50%
4	8.00%	7.00%
5	7.00%	6.00%
6	6.00%	5.00%
7	5.00%	4.50%
8	4.00%	4.25%
9	3.75%	4.00%
10	3.50%	3.50%
11	3.25%	3.25%
12	3.00%	3.00%
13	2.75%	2.75%
14	2.50%	2.50%
15-19	1.25%	2.00%
20-24	1.25%	1.50%
25-28	1.25%	0.75%
29 & over	0.00%	0.00%

** Termination rates cut out at first retirement eligibility*

Salary Increase Rates:

Inflation rate of 3.00% plus productivity increase rate of 1.50%, plus step-rate/promotional increase as shown below. (Adopted effective July 1, 2010.)

Years of Service	Annual Step-Rate Promotional Component	Annual Total Salary Increase
0	10.25	14.75
1	3.50	8.00
2	3.25	7.75
3	3.00	7.50
4	2.75	7.25
5	2.50	7.00
6	2.25	6.75
7	2.00	6.50
8	1.75	6.25
9	1.75	6.25
10	1.50	6.00
11	1.50	6.00
12	1.25	5.75
13	1.25	5.75
14	1.00	5.50
15	1.00	5.50
16	0.75	5.25
17	0.75	5.25
18	0.75	5.25
19	0.50	5.00
20	0.50	5.00
21	0.50	5.00
22	0.50	5.00
23	0.25	4.75
24	0.25	4.75
25 & over	0.00	4.50

Payroll Growth Rate:

3.25% per annum. This assumption does not include any allowance for future increase in the number of members. (Adopted effective July 1, 2010.)

Percent Married:

For valuation purposes, 75% of members are assumed to be married. Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses. (Adopted effective July 1, 1992.)

Percent Electing a Deferred Termination Benefit:	Terminating members are assumed to elect the most valuable benefit at the time of termination. Termination benefits are assumed to commence at the first age at which unreduced benefits are available. (Adopted effective July 1, 1990.)
Provision for Expenses:	The assumed investment return rate represents the anticipated net rate of return after payment of all administrative and investment expenses. These expenses are expected to reduce the gross investment return rate by 0.65%. (Adopted effective July 1, 2010.)
Asset Valuation Method:	The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment 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). The actual investment return for this purpose is determined net of all investment and administrative expenses. The actuarial value is further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method:	Normal cost and actuarial accrued liability are calculated on an individual basis and are allocated by salary. Entry age is determined as the age at member's enrollment in TFFR. The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.
Amortization Period and Method:	The actuarially determined contribution (ADC) is determined as the sum of (a) the employer normal cost rate, and (b) a level percentage of payroll required to amortize the unfunded actuarial accrued liability over the 30-year closed period that began July 1, 2013.

EXHIBIT XI

Summary of Plan Provisions

Effective Date:	July 1, 1971
Plan Year:	Twelve-month period ending June 30th
Administration:	The Teachers' Fund for Retirement (TFFR) is administered by a Board of Trustees. A separate State Investment Board is responsible for the investment of the trust assets, although the TFFR Board establishes the asset allocation policy. The Retirement and Investment Office is the administrative agency for TFFR.
Type of Plan:	TFFR is a qualified governmental defined benefit retirement plan. For Governmental Accounting Standards Board purposes, it is a cost-sharing multiple-employer public employee retirement system.
Eligibility:	All certified teachers of any public school in North Dakota participate in TFFR. This includes teachers, supervisors, principals, administrators, etc. Non-certified employees such as teacher's aides, janitors, secretaries, drivers, etc. are not allowed to participate in TFFR. Eligible employees become members at their date of employment.
Member Contributions:	All active members contribute 11.75% of their salary per year. The employer may "pick up" the member's contributions under the provisions of Internal Revenue Code Section 414(h). The member contribution rate was increased from 7.75% to 9.75% effective July 1, 2012, and was increased to 11.75% effective July 1, 2014. The total addition of 4.00% to the member contribution rate will remain in effect until TFFR is 100% funded on an actuarial basis. At that point, the member contribution rate will revert to 7.75%.
Salary:	The member's total earnings are used for salary purposes, including overtime, etc., and including nontaxable wages under a Section 125 plan, but excluding certain extraordinary compensation, such as fringe benefits or unused sick and vacation leave.

Employer Contributions: The district or other employer that employs a member contributes a percentage of the member's salary. This percentage consists of a base percentage of 7.75%, plus, since July 1, 2008, additions as shown below.

Effective Date	Addition to 7.75% Base Rate	Employer Contribution Rate
July 1, 2008	0.50%	8.25%
July 1, 2010	1.00%	8.75%
July 1, 2012	3.00%	10.75%
July 1, 2014	5.00%	12.75%

However, the additions are subject to a "sunset" provision, so the contribution rate will revert to 7.75% once the funded ratio reaches 100%, measured using the actuarial value of assets. The contribution rate will not automatically increase if the funded ratio later falls back below 100%.

Service: Employees receive credit for service while a member. A member may also purchase credit for certain periods, such as time spent teaching at a public school in another state, by paying the actuarially determined cost of the additional service. Special rules and limits govern the purchase of additional service.

Tiers: Members who join TFFR by June 30, 2008 are in Tier 1, while members who join later are in Tier 2. If a Tier 1 member terminates, takes a refund, and later rejoins TFFR after June 30, 2008, that member will be in Tier 2. As of June 30, 2013, Tier 1 members who are at least age 55 and vested (3 years of service) as of the effective date, or the sum of the member's age and service is at least 65, are considered Grandfathered, and previous plan provisions will not change. Tier 1 members who do not fit these criteria as of June 30, 2013, are considered Non-grandfathered. These members, along with Tier 2, will have new plan provisions, as described below.

Final Average Compensation (FAC): The average of the member's highest three (Tier 1 members) or five (Tier 2 members) plan year salaries. Monthly benefits are based on one-twelfth of this amount.

Normal Retirement:

a. Eligibility:

- Tier 1 members may retire upon Normal Retirement on or after age 65 with credit for 3 years of service, or if earlier, when the sum of the member's age and service is at least 85. Effective as of June 30, 2013, Tier 1 members who are at least age 55 and vested (3 years of service) as of the effective date, or the sum of the member's age and service is at least 65, normal retirement eligibility will not change (participants are Grandfathered). For those who will not meet these criteria as of June 30, 2013 (Non-grandfathered), members may retire upon Normal Retirement on or after age 65 with credit for 3 years of service, or if earlier, when the sum of the member's age and service is at least 90, with a minimum age of 60.
- Tier 2 members may retire upon Normal Retirement on or after age 65 with credit for 5 years of service, or, if earlier, when the sum of the member's age and service is at least 90. Effective July 1, 2013, Tier 2 members may retire upon Normal Retirement on or after age 65 with credit for 5 years of service, or if earlier, when the sum of the member's age and service is at least 90, with a minimum age of 60.

b. Monthly Benefit: 2.00% of FAC (monthly) times years of service.

c. Payment Form: Benefits are paid as a monthly life annuity, with a guarantee that if the payments made do not exceed the member's contributions plus interest, determined as of the date of retirement, the balance will be paid in a lump-sum to the member's beneficiary. Optional forms of payment are available; see below.

Early Retirement:

a. Eligibility: Tier 1 members may retire early after reaching age 55 with credit for three years of service, while Tier 2 members may retire early after reaching age 55 with credit for five years of service.

b. Monthly Benefit: 2.00% of FAC (monthly) times years of service, multiplied by a factor that reduces the benefit 6% for each year from the earlier of (i) age 65, or (ii) the age at which current service plus age equals 85 (Tier 1 members) or 90 (Tier 2 members). Effective July 1, 2013 for members who are either Non-grandfathered Tier 1 or Tier 2: 2.00% of FAC (monthly) times years of service, multiplied by a factor that reduces the benefit 8% for each year from the earlier of (i) age 65, or (ii) the age at which current service plus age equals 90 with a minimum age of 60.

c. Payment Form: Same as for Normal Retirement above.

Disability Retirement:

a. Eligibility: A member is eligible provided he/she has credit for at least one year of service. Effective July 1, 2013, a member is eligible provided he/she has credit for at least five years of service.

b. Monthly Benefit: 2.00% of FAC (monthly) times years of service with a minimum 20 years of service. Effective July 1, 2013, 2.00% of FAC (monthly) times years of service.

c. Payment Form: The disability benefit commences immediately upon the member's retirement. Benefits cease upon recovery or reemployment. Disability benefits are payable as a monthly life annuity with a guarantee that, at the member's death, the sum of the member's contributions plus interest as of the date of retirement that is in excess of the sum of payments already received will be paid in a lump sum to the member's beneficiary.

d. All alternative forms of payment other than level income and the partial lump-sum option are also permitted in the case of disability retirement. For basis recovery only, disability benefits are converted to normal retirement benefits when the member reaches normal retirement age or age 65, whichever is earlier.

Deferred Termination Benefit:

a. Eligibility: A Tier 1 member with at least three years of service, or a Tier 2 member with at least five years of service, who does not withdraw his/her contributions from the fund, is eligible for a deferred termination benefit.

b. Monthly Benefit: 2.00% of FAC (monthly) times years of service. Both FAC and service are determined at the time the member leaves active employment. Benefits may commence unreduced at age 65 or when the sum of the member's age and service is 85 (Grandfathered Tier 1 members) or 90 with a minimum age of 60 (Non-grandfathered Tier 1 and Tier 2 members). Reduced benefits may commence at or after age 55 if the member is not eligible for an unreduced benefit. Reductions are the same as for Early Retirement.

c. Payment Form: The form of payment is the same as for Normal Retirement above.

d. Death Benefit: A member who dies after leaving active service but before retiring is entitled to receive a benefit as described below.

Withdrawal (Refund) Benefit:

a. Eligibility: Tier 1 members leaving covered employment with less than three years of service, and Tier 2 members leaving covered employment with less than five years of service, are eligible. Optionally, vested members may withdraw their contributions plus interest in lieu of the deferred benefits otherwise due.

b. Benefit: The member who withdraws receives a lump-sum payment of his/her employee contributions, plus the interest credited on these contributions. Interest is credited at 6% per year (0.5% per month).

Death Benefit:

a. Eligibility: Death must have occurred while an active or an inactive, non-retired member.

b. Benefit: Upon the death of a nonvested member, a refund of the member's contributions and interest is paid. Upon the death of a vested member, the beneficiary may elect (i) the refund benefit above, or (ii) a life annuity of the normal retirement benefit, determined under Option One below, based on FAC and service as of the date of death, but without applying any reduction for the member's age at death. In determining the reduction for Option One, members not eligible for normal retirement benefits use the Fund's option tables for disabled members.

Optional Forms of Payment:

There are optional forms of payment available on an actuarially equivalent basis, as follows:

Option 1 - A life annuity payable while either the participant or his beneficiary is alive, "popping-up" to the original life annuity if the beneficiary predeceases the member.

Option 2 - A life annuity payable to the member while both the member and beneficiary are alive, reducing to 50% of this amount if the member predeceases the beneficiary, and "popping-up" to the original life annuity if the beneficiary predeceases the member.

Option 3a - A life annuity payable to the member, with a guarantee that, should the member die prior to receiving 60 payments (five years), the payments will be continued to a beneficiary for the balance of the five-year period. (This option has been replaced by Option 3b. It is not available to employees who retire on or after August 1, 2003. Retirees who elected this option prior to that date are unaffected.)

Option 3b - A life annuity payable to the member, with a guarantee that, should the member die prior to receiving 240 payments (twenty years), the payments will be continued to a beneficiary for the balance of the twenty-year period. (This option replaced Option 3a effective August 1, 2003.)

Option 4 - A life annuity payable to the member, with a guarantee that, should the member die prior to receiving 120 payments (10 years), the payments will be continued to a beneficiary for the balance of the ten-year period.

Option 5 - A non-level annuity payable to the member, designed to provide a level total income when combined with the member's Social Security benefit. This option is not available to disabled retirees.

In addition, members may elect a partial lump-sum option (PLSO) at retirement. Under this option, a member receives an immediate lump-sum equal to 12 times the monthly life annuity benefit and a reduced annuity. The reduction is determined actuarially. The member can then elect to receive the annuity benefit in one of the other optional forms, except that members who receive a PLSO may not elect Option 5 – the level income option. The PLSO is not available to disabled retirees or retirees who are not eligible for an unreduced retirement benefit.

Actuarial equivalence is based on tables adopted by the Board of Trustees.

Cost-of-living Increase: From time to time, TFFR has been amended to grant certain post-retirement benefit increases. However, TFFR has no automatic cost-of-living increase features.

EXHIBIT XII

Summary of Plan Changes

1991 Legislative Session:

1. Benefit multiplier increased from 1.275% to 1.39% for all future retirees.
2. Provide a post-retirement benefit increase for all annuitants receiving a monthly benefit on June 30, 1991. The monthly increase is the greater of a 10% increase or a level increase based on years of service and retirement date:
   a. $3 per year of service for retirements before 1980
   b. $2 per year of service for retirements between 1980 and 1983
   c. $1 per year of service for retirements from 1984 through June 30, 1991

   Minimum increase is $5 per month. Maximum increase is $75 per month.

1993 Legislative Session:

1. Benefit multiplier increased from 1.39% to 1.55% for all future retirees.
2. Provide a post-retirement benefit increase for all annuitants receiving a monthly benefit on June 30, 1993. The monthly increase is the greater of a 10% increase or a level increase based on years of service and retirement date:
   a. $3 per year of service for retirements before 1980
   b. $2.50 per year of service for retirements between 1980 and 1983
   c. $1 per year of service for retirements from 1984 through June 30, 1993

   Minimum increase is $5 per month. Maximum increase is $100 per month.
3. Minimum retirement benefit increased to $10 times years of service up to 25, plus $15 times years of service greater than 25. (Previously was $6 up to 25 years of service plus $7.50 over 25 years of service.)
4. Disability benefit changed to 1.55% of FAC times years of service using a minimum of 20 years of service.

1995 Legislative Session:

There were no material changes made during the 1995 legislative session.

1997 Legislative Session:

1. Benefit multiplier increased from 1.55% to 1.75% for all future retirees.
2. Member contribution rate and employer contribution rate increased from 6.75% to 7.75%.
3. A $30.00/month benefit improvement was granted to all retirees and beneficiaries.

1999 Legislative Session:

1. Active members will now be fully vested after three years (rather than five years) of service.
2. Early retirement benefits will be reduced 6% per year from the earlier of (i) age 65, or (ii) the date as of which age plus service equals 85 (rather than from age 65 in all cases).
3. An ad hoc COLA was provided for all retirees and beneficiaries. This increase is equal to an additional $2.00 per month for each year of service plus $1.00 per month for each year since the member's retirement.
4. The formula multiplier was increased from 1.75% to 1.88% effective July 1, 1999.

2001 Legislative Session:

1. An ad hoc COLA was provided for all retirees and beneficiaries. The ad hoc COLA increase is equal to an additional $2.00 per month for each year of service plus $1.00 per month for each year since the member's retirement. Retirees and beneficiaries will also receive two additional increases equal to 0.75% times the monthly benefit, payable July 1, 2001 and July 1, 2002. The two 0.75% increases are conditional. If the actuarial margin is a shortfall, i.e., is negative, by 60 basis points or more, or if the margin has been negative by 30 or more basis points for two years, the Board could elect to suspend the increase.
2. The formula multiplier was increased from 1.88% to 2.00% effective July 1, 2001.

2003 Legislative Session:

1. Partial lump-sum option adopted, equal to twelve times the monthly life annuity benefit. Not available if level-income option is elected. Not available for reduced retirement or disability retirement.
2. Five-year certain and life option replaced with 20-year certain and life. This does not impact retirees who retired under the five-years certain and life option.

3. Employer service purchase authorized.
4. Active members of the Department of Public Instruction are permitted to make a one-time irrevocable election to transfer to the North Dakota Public Employees Retirement System in FY 2004. Both assets and liabilities for all TFFR service will be transferred for electing employees. Transferred assets will be based on the actuarial present value of the member's accrued TFFR benefit, or the member's contribution account balance if larger.

2005 Legislative Session:

There were no material changes made during the 2005 legislative session.

2007 Legislative Session:

1. For active members hired on or after July 1, 2008 (called Tier 2 members):
   a. Members will be eligible for an unreduced retirement benefit when they reach age 65 with at least five years of service (rather than three years of service); or if earlier, when the sum of the member's age and service is at least 90 (rather than 85).
   b. Members will be eligible for a reduced (early) retirement benefit when they reach age 55 with five years of service, rather than three years of service.
   c. Members will be fully vested after five years of service (rather than three year of service).
   d. The Final Average Compensation for Tier 2 members is the average of the member's highest five plan year salaries, rather than the average of the three highest salaries.
2. The employer contribution rate increases from 7.75% to 8.25% effective July 1, 2008, but this rate will be reset to 7.75% once the Fund reaches a 90% funded ratio, measured using the actuarial value of assets. (If the funded ratio later falls below 90% again, the contribution rate will not automatically return to 8.25%.)
3. Employer contributions are required on the salary of reemployed retirees.
4. Active members of the Department of Career and Technical Education are permitted to make a one-time irrevocable election to transfer to the North Dakota Public Employees Retirement System in FY 2008. Both assets and liabilities for all TFFR service will be transferred for electing employees. Transferred assets will be the actuarial present value of the member's accrued TFFR benefit, or the member's contribution account balance, if larger.

2009 Legislative Session:

1. An individual who retired before January 1, 2009, and is receiving monthly benefits is entitled to receive a supplemental payment from the fund. The supplemental payment is equal to an amount determined by taking twenty dollars multiplied by the member's number of years of service credit plus fifteen dollars multiplied by the number of years since the member's retirement as of January 1, 2009. The supplemental payment may not exceed the greater of 10% of the member's annual annuity or $750.00. TFFR will make the supplemental payment in December 2009.
2. The employer contribution rate increases from 8.25% to 8.75% effective July 1, 2010, but this rate will be reset to 7.75% once the Fund reaches a 90% funded ratio, measured using the actuarial value of assets. (If the funded ratio later falls below 90% again, the contribution rate will not automatically return to 8.75%.)

2011 Legislative Session:

1. The employer contribution rate increases from 8.75% to 10.75% effective July 1, 2012, and increases thereafter to 12.75% effective July 1, 2014. The member contribution rate increases from 7.75% to 9.75% effective July 1, 2012, and increases thereafter to 11.75% effective July 1, 2014. Employer and member contributions will be reset to 7.75% once the Fund reaches a 90% funded ratio, measured using the actuarial value of assets.
2. For current Tier 1 members who, as of June 30, 2013, are vested (at least 3 years of service), and at least age 55, OR the sum of the member's age and service is at least 65, are considered a Tier 1 Grandfathered member. Current Tier 1 members, who will not meet this criteria as of June 30, 2013, are considered a Tier 1 Non-grandfathered member.
3. Eligibility for normal/ unreduced retirement benefits do not change for Tier 1 Grandfathered members. For Tier 1 Non-grandfathered and Tier 2 members, effective after June 30, 2013, unreduced retirement benefits start when the member reaches age 65 and is vested (3 years for Tier 1 Non-grandfathered, 5 years for Tier 2); or if earlier, when the sum of the member's age and service is at least 90, with a minimum age of 60.
4. Early retirement benefits do not change for Tier 1 Grandfathered members. For Tier 1 Non-grandfathered and Tier 2 members, effective after June 30, 2013, the normal retirement benefit will be reduced by 8% per year from the earlier of age 65 OR the age at which the sum of the member's age and service is at least 90, with a minimum age of 60.
5. Effective after June 30, 2013, all members may retire on disability after a period of at least five years of service (rather one year of service). The amount of the benefit is based on a 2% multiplier and actual service (rather than a minimum of twenty years of service in the current calculation).

6. Effective July 1, 2012, re-employed retirees are required to pay member contributions.
7. Effective August 1, 2011, beneficiary and death benefit provisions were updated, and the 60-month death payment benefit was removed.

2013 Legislative Session:

1. Employer and member contribution rates will be reset to 7.75% once the Fund reaches a 100% funded ratio (rather than the 90% funded ratio enacted with the 2011 Legislation), measured using the actuarial value of assets.
2. Various technical and administrative changes that do not have an actuarial effect on the Plan were enacted.

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NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
Teachers' Fund for Retirement
State Investment Board

Segal Consulting

North Dakota Teachers' Fund for Retirement

Actuarial Valuation as of July 1, 2014

October 23, 2014

Presented By:

Kim Nicholl, FSA, MAAA, EA
Senior Vice President

This document has been prepared by Segal Consulting for the benefit of the Board of Trustees of the North Dakota Teachers' Fund for Retirement and is not complete without the presentation provided at the October 23, 2014 meeting of the Board of Trustees. This document should not be shared, copied or quoted, in whole or in part, without the consent of Segal Consulting, except to the extent otherwise required by law. Except where otherwise specifically noted, the actuarial calculations and projections were completed under the supervision of Matthew A. Strom, FSA, MAAA, Enrolled Actuary.

Discussion Topics – Valuation and Projections

Segal

- Overview of Valuation Process
- Summary of Valuation Highlights
- Membership and Demographics
- Valuation Results and Projections

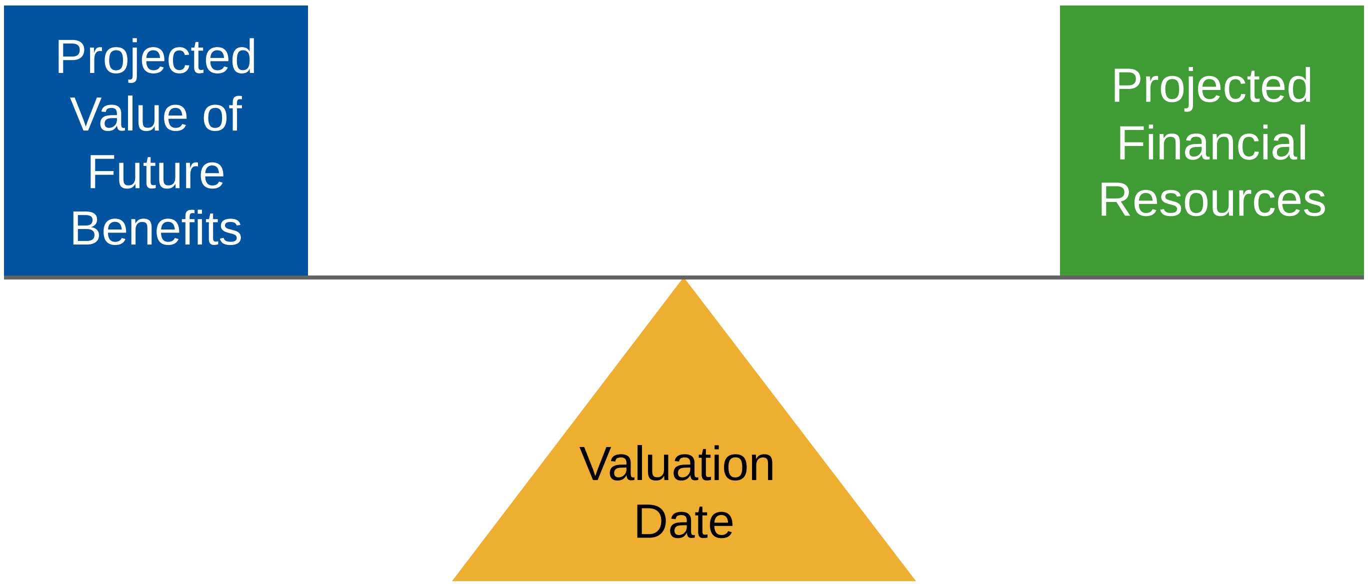
Purposes of the Actuarial Valuation

- Report the Fund's actuarial assets
- Calculate the Fund's liabilities
- Determine the funding policy Actuarially Determined Contribution (ADC) for fiscal year 2015
- Provide information for annual financial statements
- Identify emerging trends

How is an Actuarial Valuation Performed?

- Gather data as of the valuation date
  - Participant data
  - Financial data
- Project a benefit for each member, for each possible benefit
- Apply assumptions about:
  - Economic (investment return, inflation, salary raises)
  - People or demographic (death, disability, retirement, turnover)
- Apply assumptions to benefits to determine a total liability and assign liabilities to service
- Apply the funding policy to determine the actuarially determined contribution (ADC)
  - Based on actuarial cost method and asset valuation method

Actuarial Balance



Over the life of a pension system,

Benefits + Expenses = Contributions + Investment Return

Contributions = Benefits + Expenses - Investment Return

Actuarial Assumptions

Two types:

Demographic	Economic
• Retirement • Disability • Death in active service • Withdrawal • Death after retirement	• Inflation • Interest rate (return on assets) • Salary increases • Payroll growth

Actuaries make assumptions as to when and why a member will leave active service, and estimate the amount and duration of the pension benefits paid.

Economic Assumptions

➢ Interest rate

- 8%, net of all expenses

➢ Salary increase rates

- Based on service
- Ranges from 14.75% for new members to 4.5% for members with 25 or more years of service

➢ Payroll growth

- 3.25%

Actuarial Methods

Asset valuation method (actuarial value of assets)

- Smoothing of investment gains or losses
- TFFR uses a five-year smoothing method
  - Investment returns above or below the expected return are recognized over five years
- 20% market value corridor is applied (e.g., actuarial value must fall within 80% to 120% of market value)

Cost method

- Allocation of liability between past service and future service
  - TFFR uses the entry age normal cost method
  - Most retirement systems use the entry age normal cost method

Amortization method

- 30-year “closed” period to pay off unfunded actuarial accrued liability, effective with the July 1, 2013, actuarial valuation
  - 29 years remaining as of July 1, 2014
- Based on level percentage of payroll

Entry Age Normal Cost Method

Allocates Cost Between Past and Future service

- **Normal Cost:** Cost of annual benefit accrual as a level percent of salary
- **Actuarial Accrued Liability:** Represents accumulated value of past normal costs (or difference between total cost and future normal costs)
- **Unfunded Actuarial Accrued Liability:** Actuarial accrued liability minus actuarial value of assets
- **Actuarially Determined Contribution:**
  - Normal cost plus
  - Amortization payment of unfunded accrued liability over a 29-year closed period as a percent of payroll
    - 30-year closed period began July 1, 2013

Actuarial Accrued Liability and Normal Cost

The **actuarial accrued liability** is the portion of the total liability that is allocated to members' past years of service

➢ Retirees and beneficiaries:

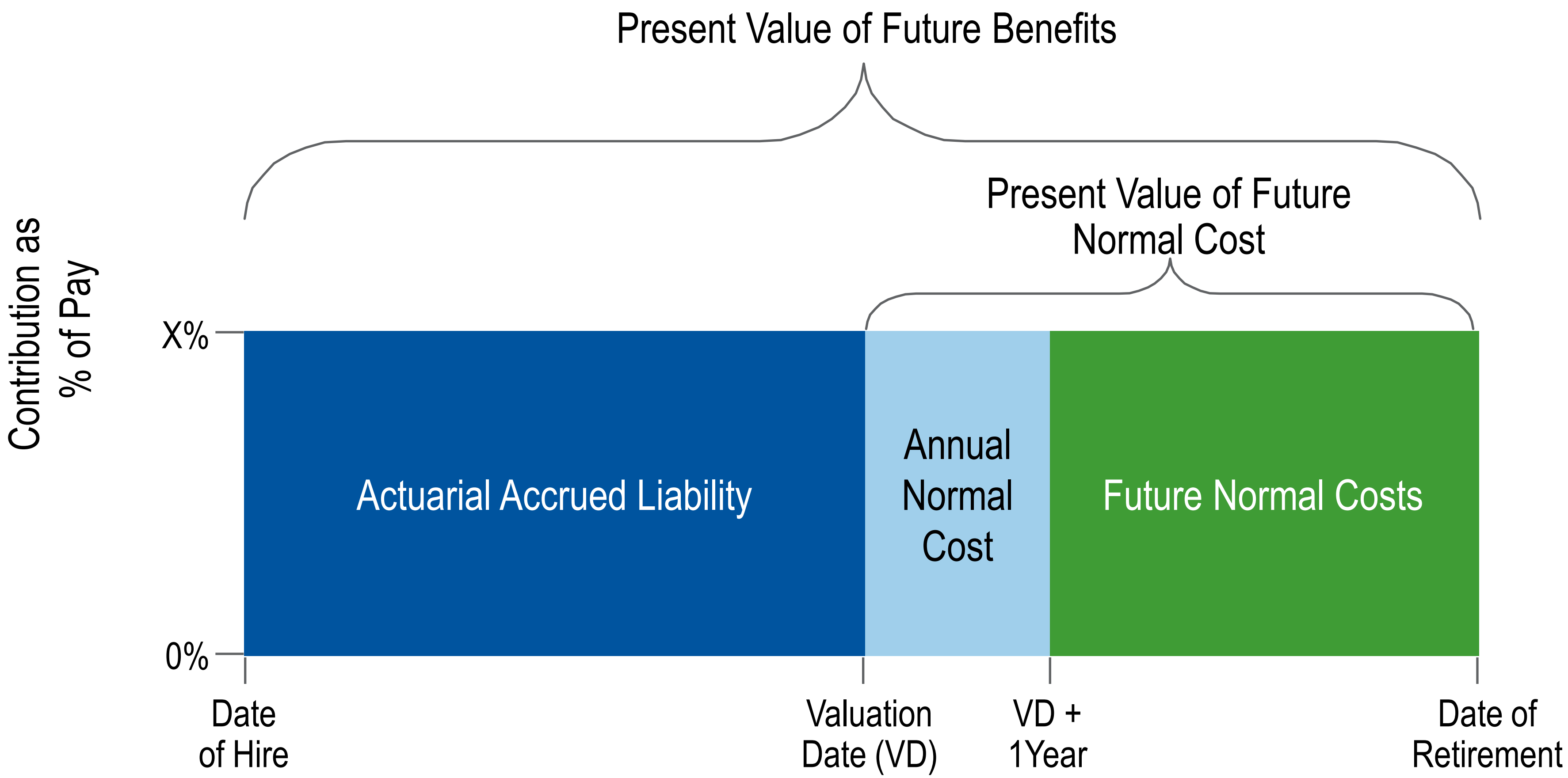
- All years of service are in the past, so the **actuarial accrued liability** is equal to the total liability

➢ Active members:

- The **actuarial accrued liability** represents the portion of the total liability that is attributable to the years of service that the members have already worked
- The **normal cost** represents the anticipated growth in the accrued liability in the coming year

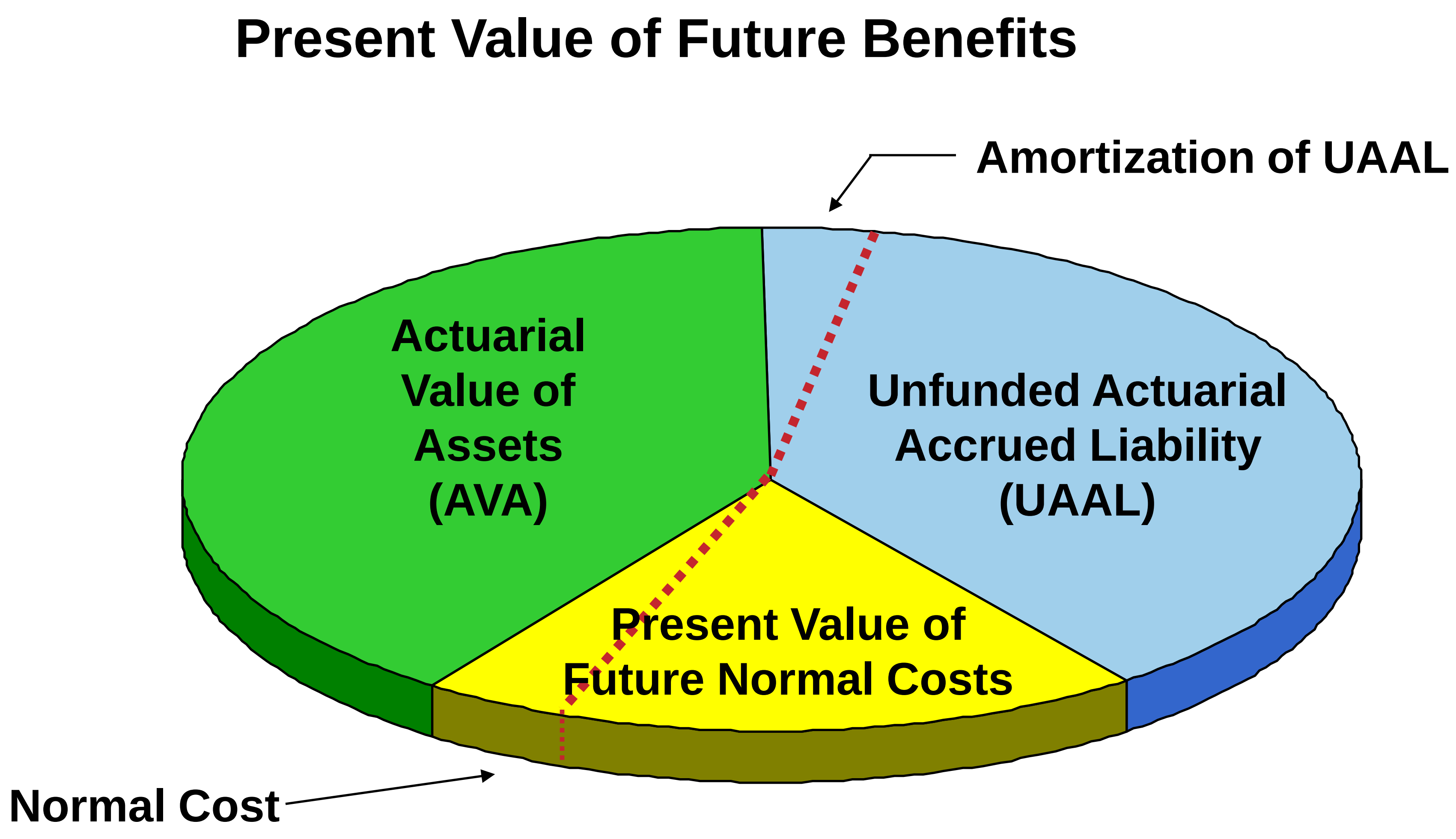
The actuarial accrued liability is compared to the assets as a measure of funding progress.

Funding Process



Actuarial Accrued Liability - Assets = Unfunded Actuarial Accrued Liability

Actuarially Determined Contribution



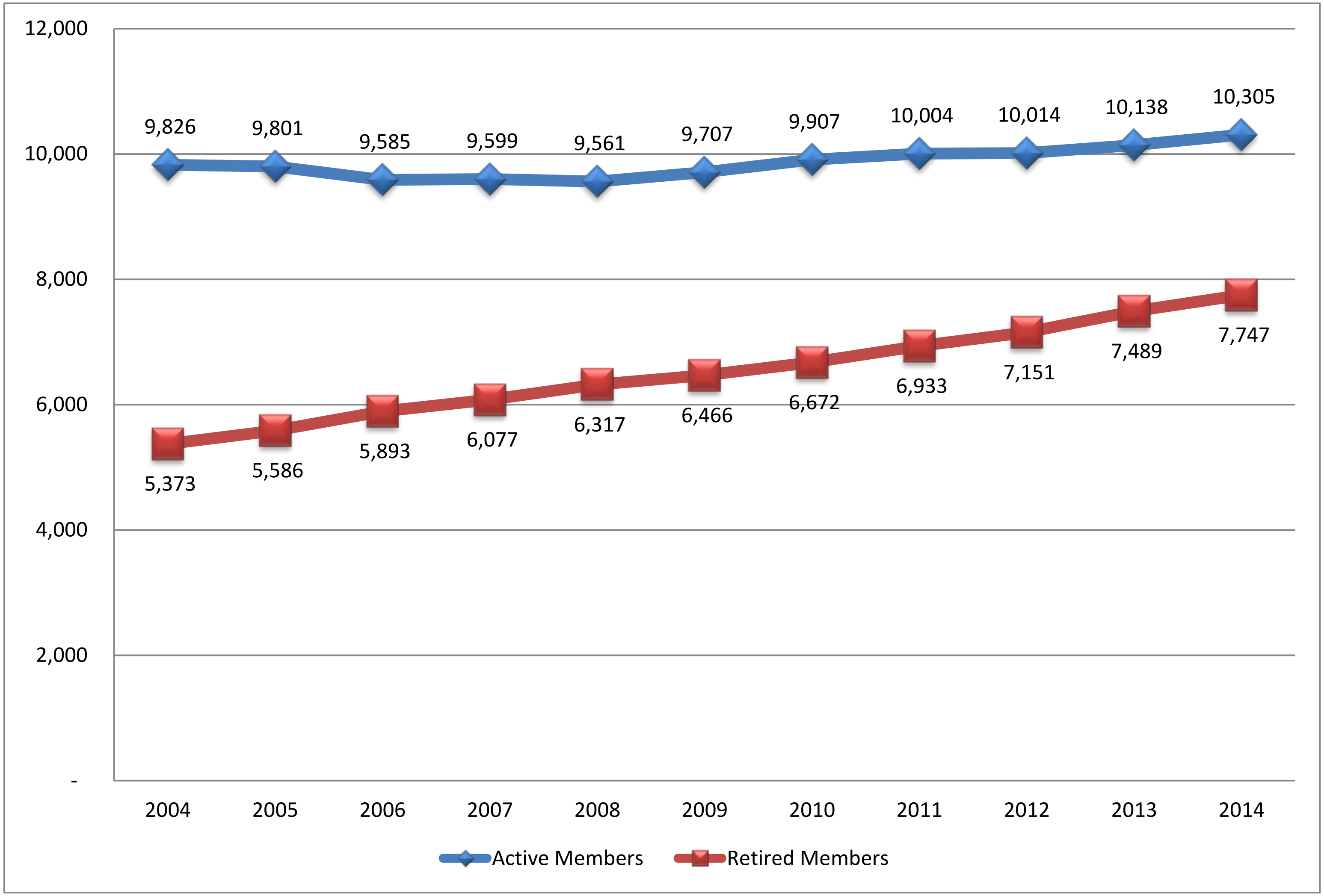
Summary of Valuation Highlights

- Valuation reflects increases in contribution rates contained in HB 1134
  - Member rate increased from 9.75% to 11.75% on July 1, 2014
  - Employer rate increased from 10.75% to 12.75% on July 1, 2014
  - Increases will revert to 7.75% for both members and employers once the funded ratio reaches 100% (measured using the actuarial value of assets)
- Market value of assets returned 16.1% for year ending 6/30/14 (Segal calculation)
  - Gradual recognition of deferred gains resulted in 12.6% return on actuarial value of assets
- Net impact on funded ratio was an increase from 58.8% (as of 7/1/2013) to 61.8% (as of 7/1/2014)
- Effective amortization period decreased from 28 years (as of 7/1/2013) to 24 years (as of 7/1/2014)
- Net impact on actuarially determined contribution (ADC) was an increase from 10.26% of payroll (FY14) to 11.57% of payroll (FY15)
  - The 10.26% ADC from FY14 reflected the present value of the 4% total increase in contributions effective July 1, 2014, and was compared to the 10.75% employer rate for a contribution sufficiency of 0.49% of payroll
  - Based on the employer contribution rate of 12.75% for FY15, the contribution sufficiency has increased to 1.18% of payroll

Membership

	2014	2013	Change
Active:			
• Number	10,305	10,138	+1.6%
• Payroll (annualized)	$557.2 mil	$526.7 mil	+5.8%
• Average Age	42.9 years	43.2 years	- 0.3 years
• Average Service	12.8 years	13.2 years	- 0.4 years
Retirees and Beneficiaries			
• Number	7,747	7,489	+3.4%
• Total Annual Benefits	$165.8 mil	$154.8 mil	+7.1%
• Average Monthly Benefit	$1,783	$1,722	+3.5%

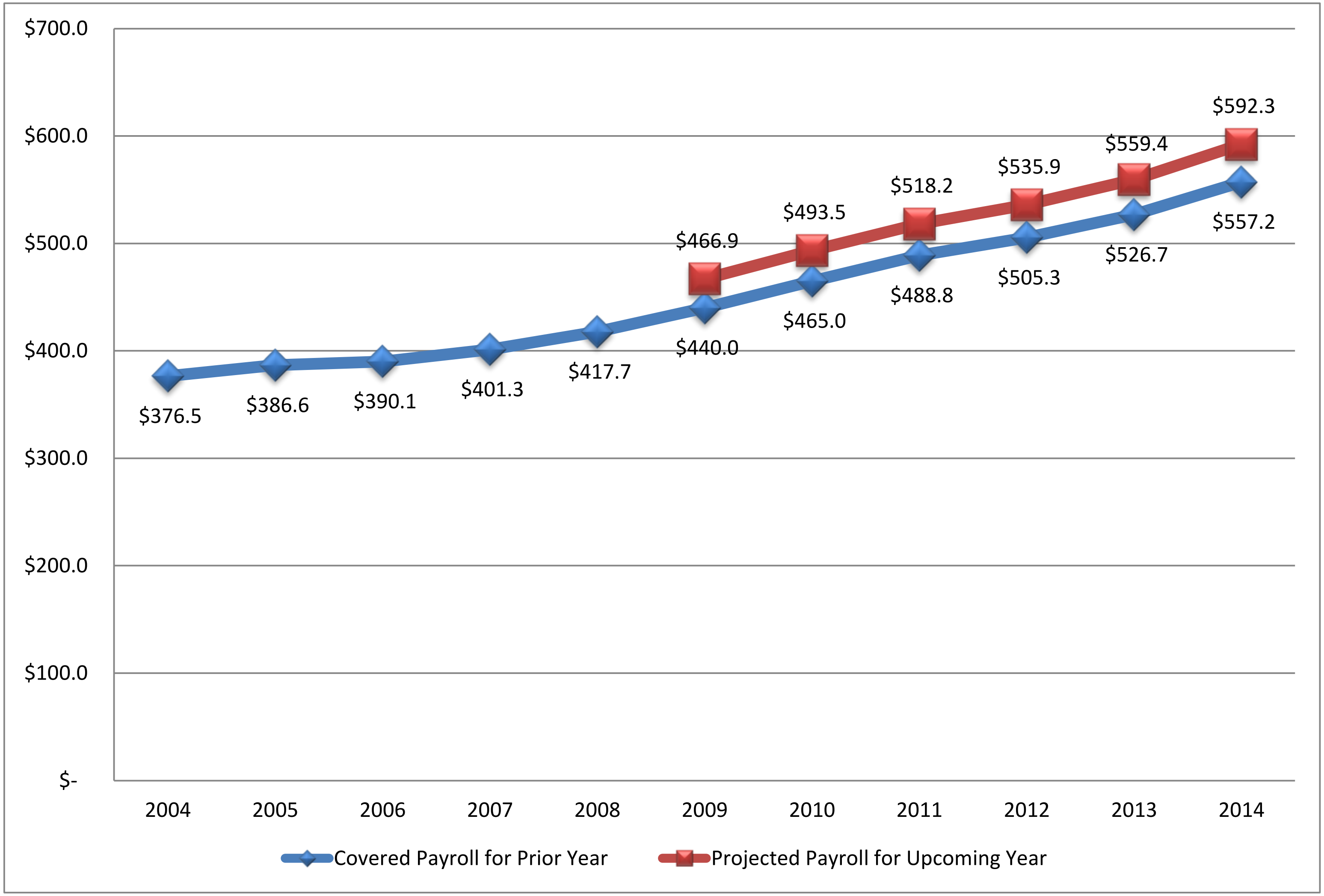
Active and Retired Membership



Since 2004, number of retirees and beneficiaries has increased 3.7% per year on average.

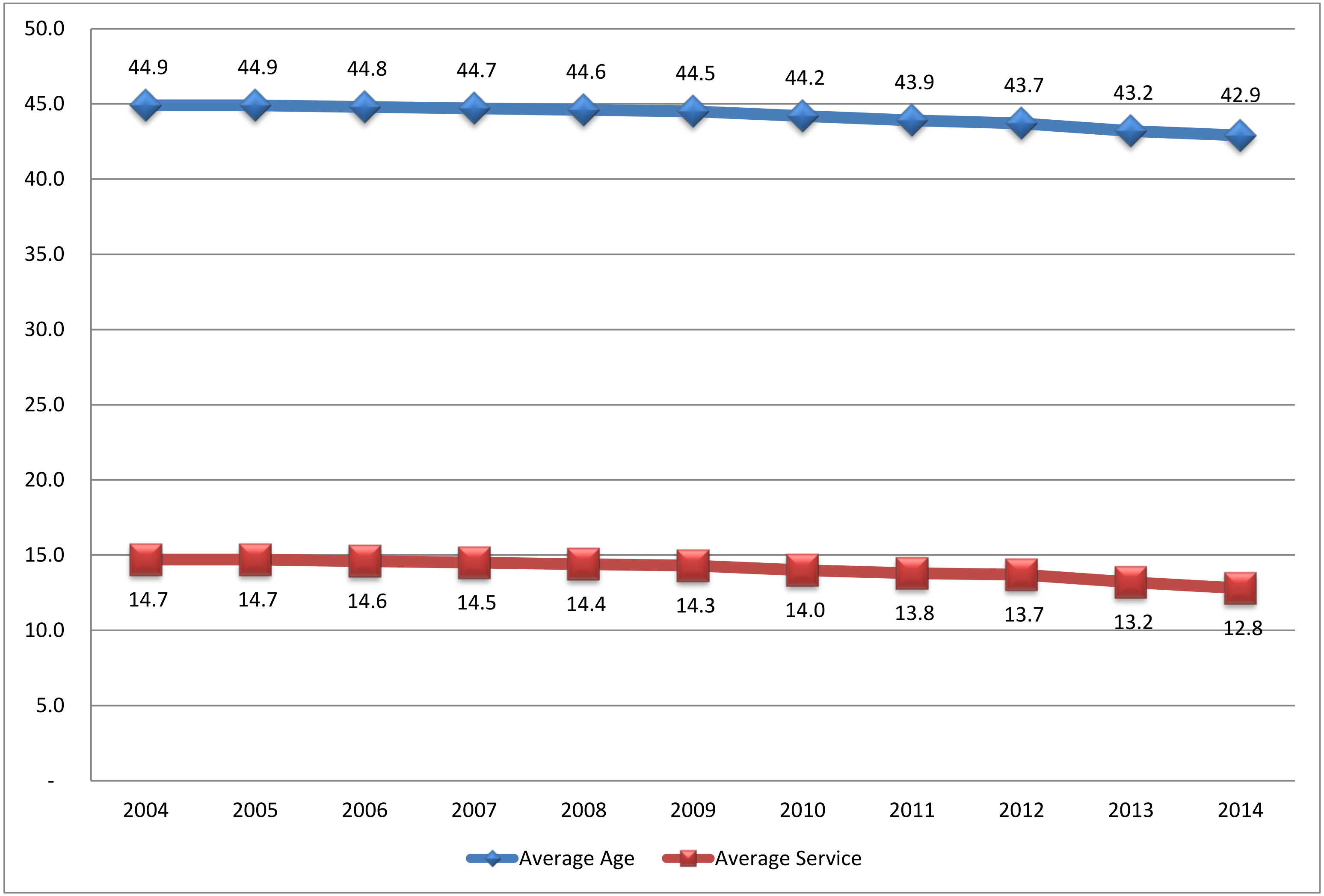
Active Payroll

$ Millions

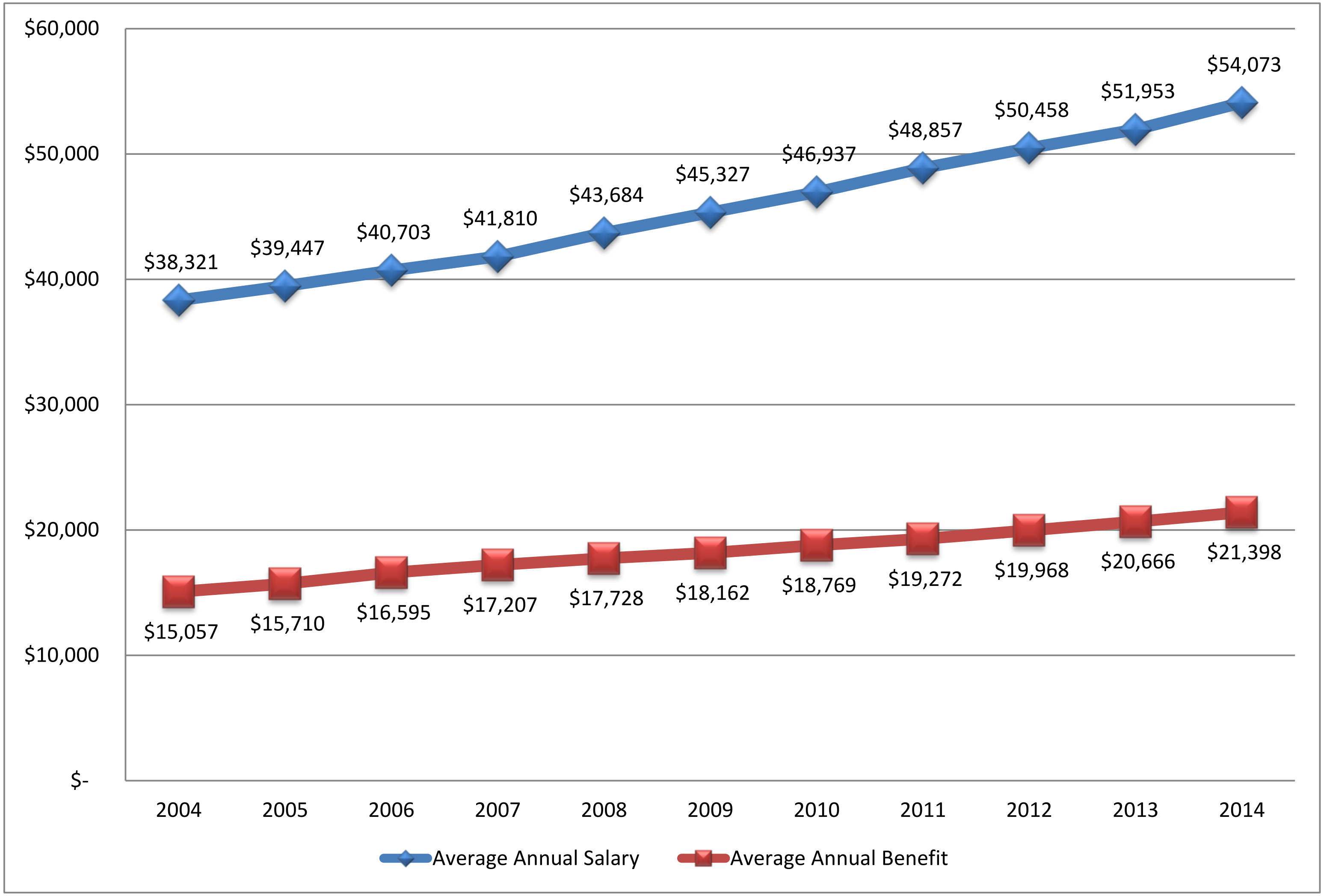


Since 2004, active payroll has increased, on average, 4.0% per year.

Average Age and Service of Active Members



Average Salary and Average Benefit



Since 2004, average salary has increased, on average, 3.5% per year. Average annual benefit has also increased by 3.6% per year.

Assets

- The market value of assets increased from $1.839 billion (as of June 30, 2013) to $2.091 billion (as of June 30, 2014)
  - Segal determined the investment return was 16.1%, net of investment and administrative expenses
- The actuarial value of assets – which smoothes investment gains and losses over five years – increased from $1.762 billion (as of June 30, 2013) to $1.940 billion (as of June 30, 2014)
  - Investment return of 12.6%, net of investment and administrative expenses
  - Actuarial value is 92.8% of market
  - There is a total of $151 million of deferred net investment gains that will be recognized in future years
- The average annual return on <u>market</u> assets
  - 10-year average is 6.8%
  - 20-year average is 7.6%
- The average annual return on <u>actuarial</u> assets
  - 10-year average is 5.2%
  - 20-year average is 6.9%

Market Value of Assets ($ in millions)

Fiscal Year Ending June 30, 2014	
Beginning of Year	$1,839
Contributions:	
• Employer	62
• Member	57
• Service Purchases	2
• Total	121
Benefits and Refunds	(162)
Investment Income (net)	293
End of Year	$2,091
Rate of Return	16.1%

Actuarial Value of Assets ($ in millions)

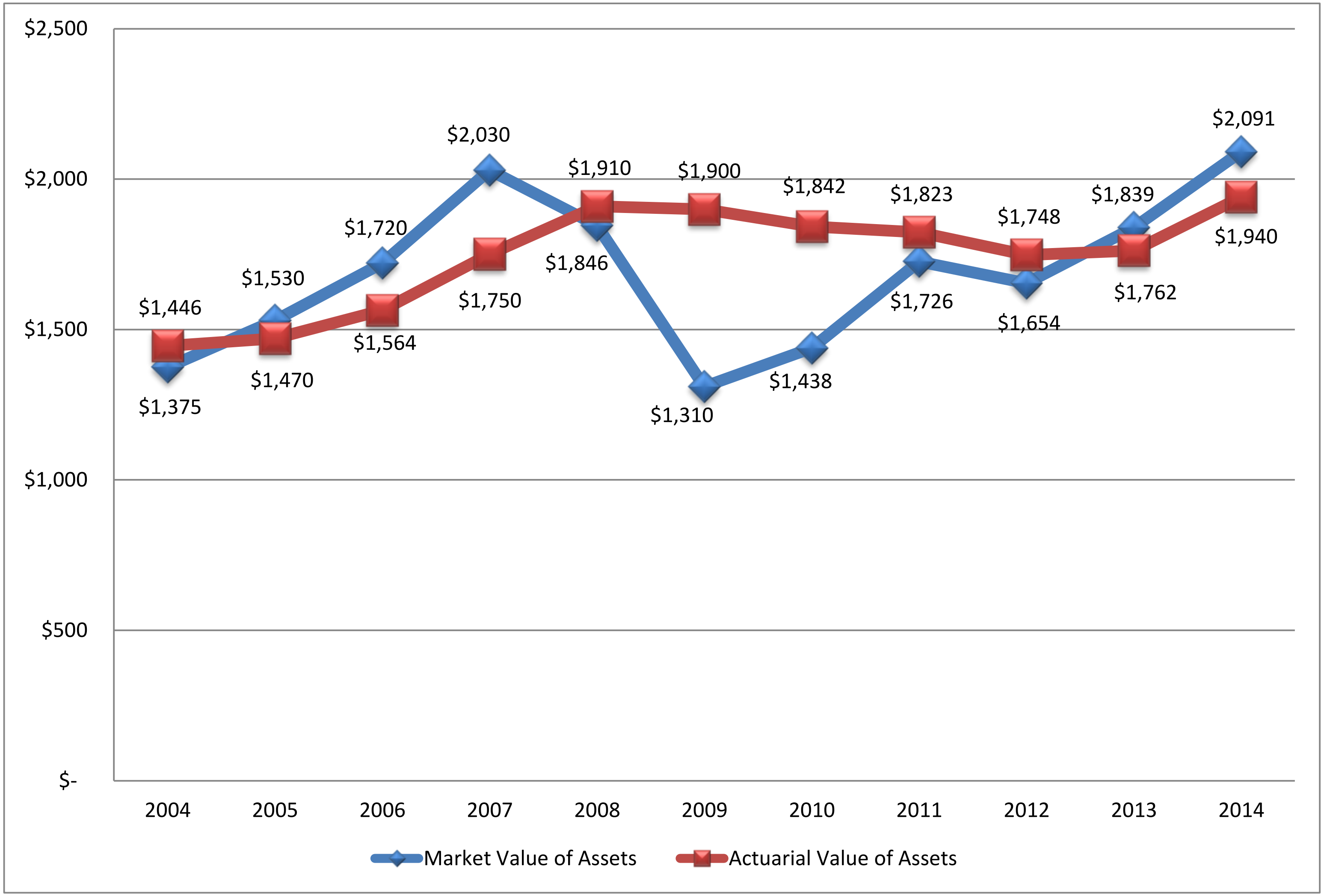
1. Market Value of Assets as of June 30, 2013	$1,839
2. Contributions and Benefits for FYE June 30, 2014	(41)
3. Expected Return	146
4. Expected Market Value of Assets (1) + (2) + (3)	$1,944
5. Actual Market Value of Assets on June 30, 2014	**2,091**
6. Excess/(Shortfall) for FYE June 30, 2014 (5) – (4)	147
Excess/(Shortfall) Returns:	

Year	Initial Amount	Deferral %	Unrecognized Amount
2014	$147	80%	$118
2013	87	60%	53
2012	(159)	40%	(64)
2011	220	20%	44
2010	74	0%	0
7. Total			**$151**

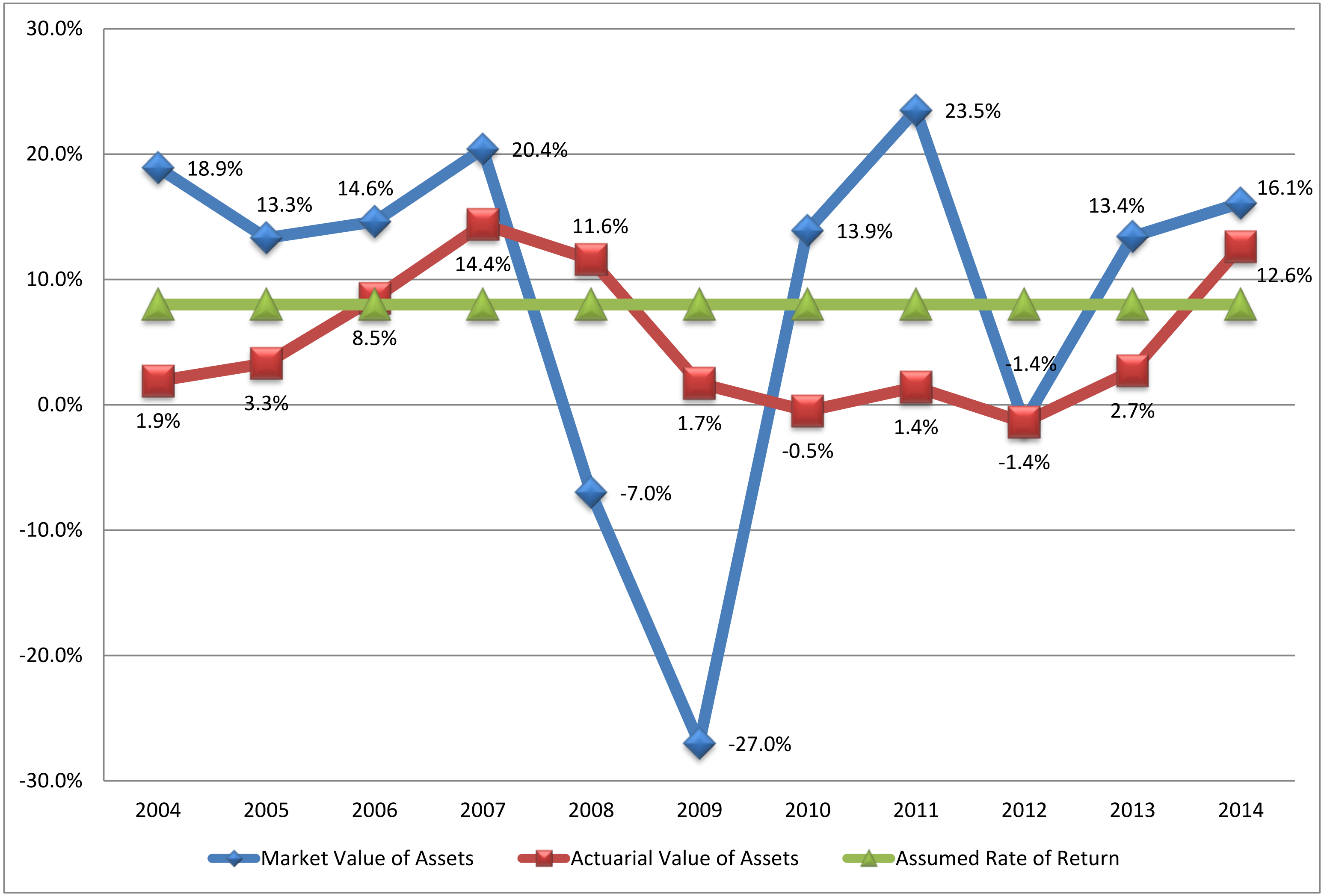
8. Actuarial Value of Assets as of June 30, 2014 (5) - (7)	**$1,940**
9. Actuarial Value of Assets as a % of Market Value of Assets	92.8%

Market and Actuarial Values of Assets

$ Millions

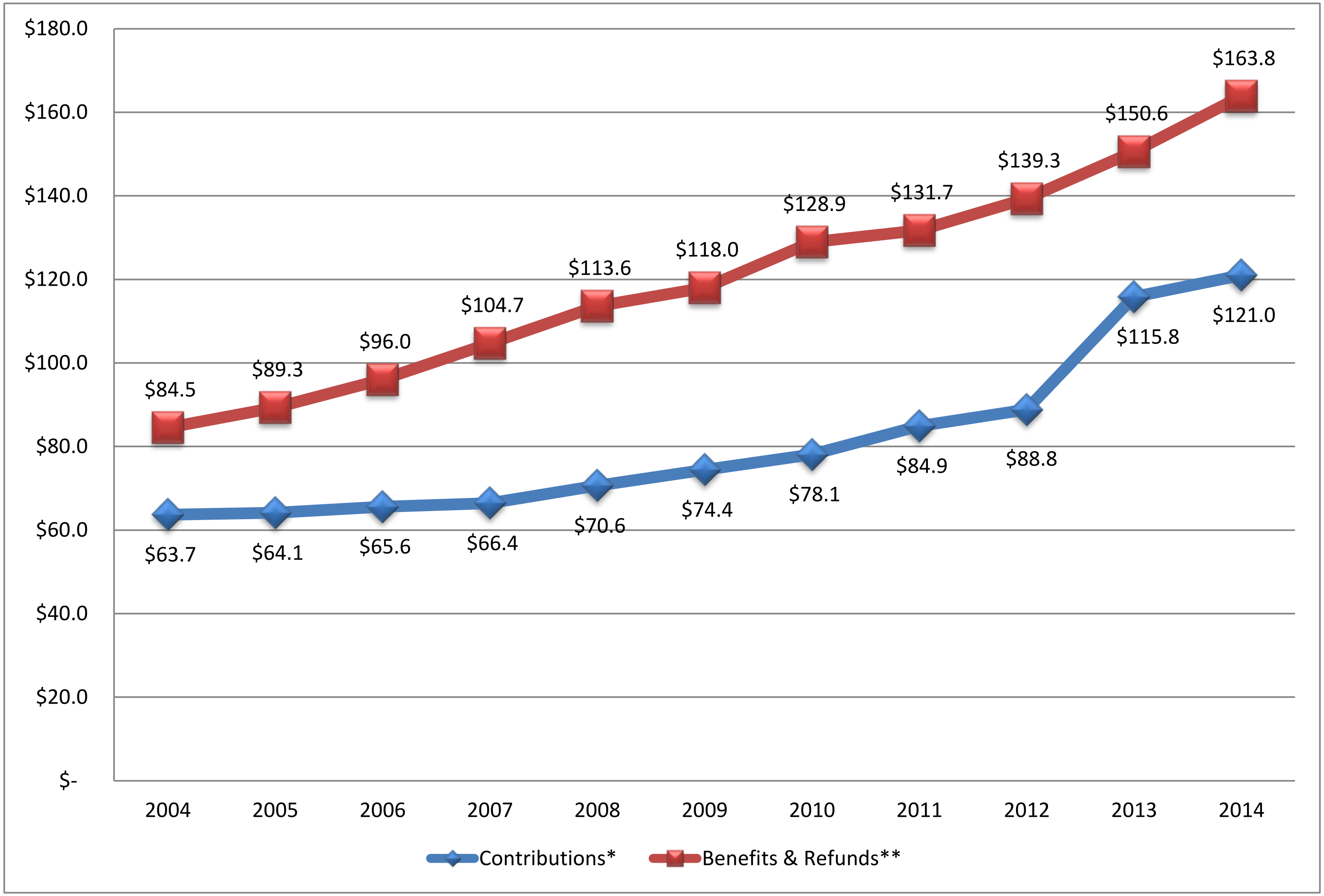


Asset Returns



Contributions vs. Benefits and Refunds

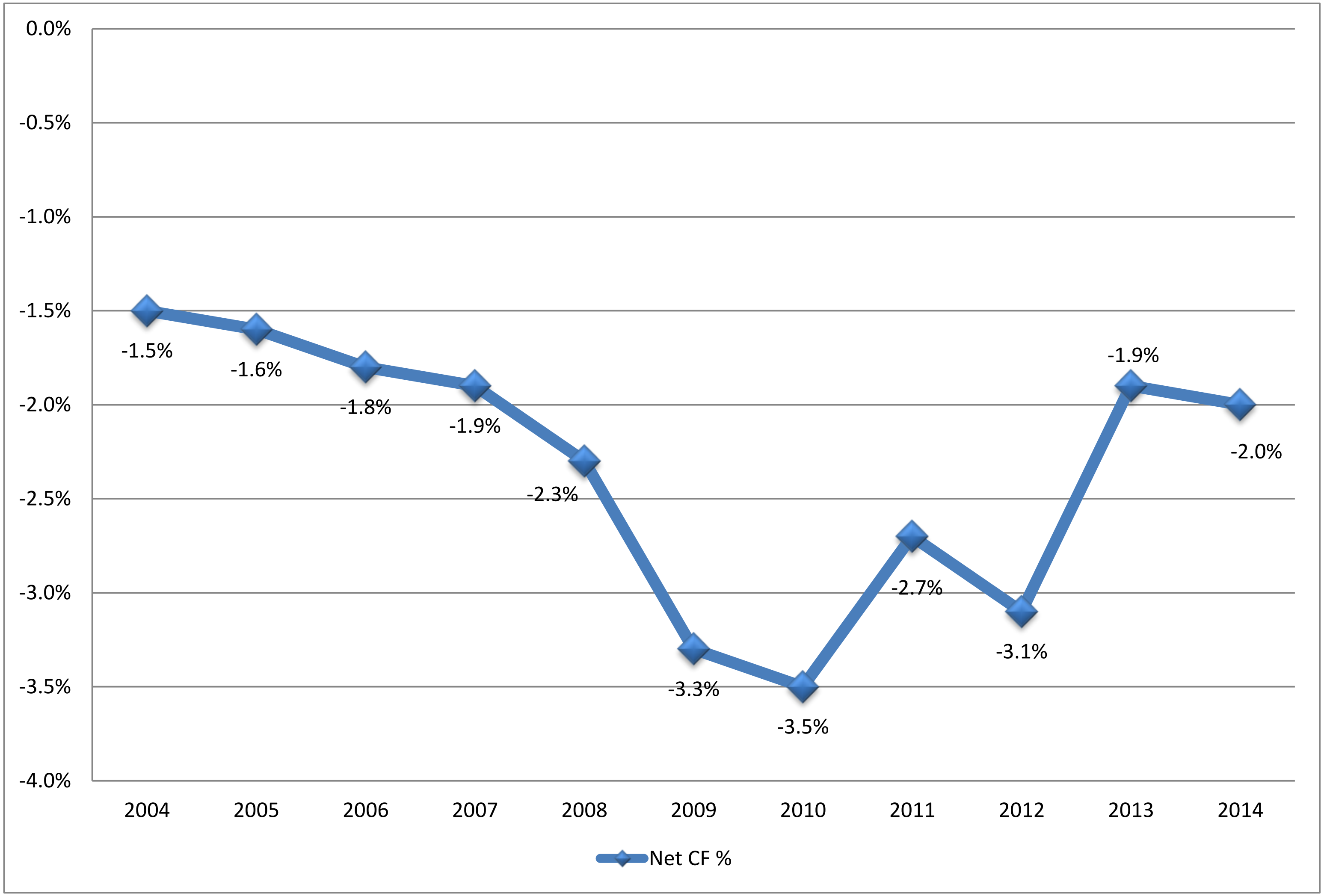
$ Millions



* Includes member and employer contributions, and service purchases

** Includes administrative expenses

Net Cash Flow as a % of Market Value



Valuation Results ($ in millions)

	July 1, 2014	July 1, 2013
Actuarial Accrued Liability:		
• Active Members	$1,398	$1,371
• Inactive Members	79	74
• Retirees and Beneficiaries	1,662	1,552
Total	**$3,139**	**$2,997**
Actuarial Assets	1,940	1,762
Unfunded Accrued Liability	$1,198	$1,235
Funded Ratio	61.8%	58.8%

Actuarially Determined Contribution

	July 1, 2014	July 1, 2013*
Normal Cost Rate	10.63%	10.15%
Member Rate	11.75%	9.75%
Employer Normal Cost Rate	-1.12%	0.40%
Adjusted for Timing	-1.12%	0.41%
Amortization of UAAL*	12.69%	9.85%
Actuarially Determined Contribution	11.57%	10.26%
Employer Rate	12.75%	10.75%
Contribution Sufficiency/(Deficiency)	1.18%	0.49%

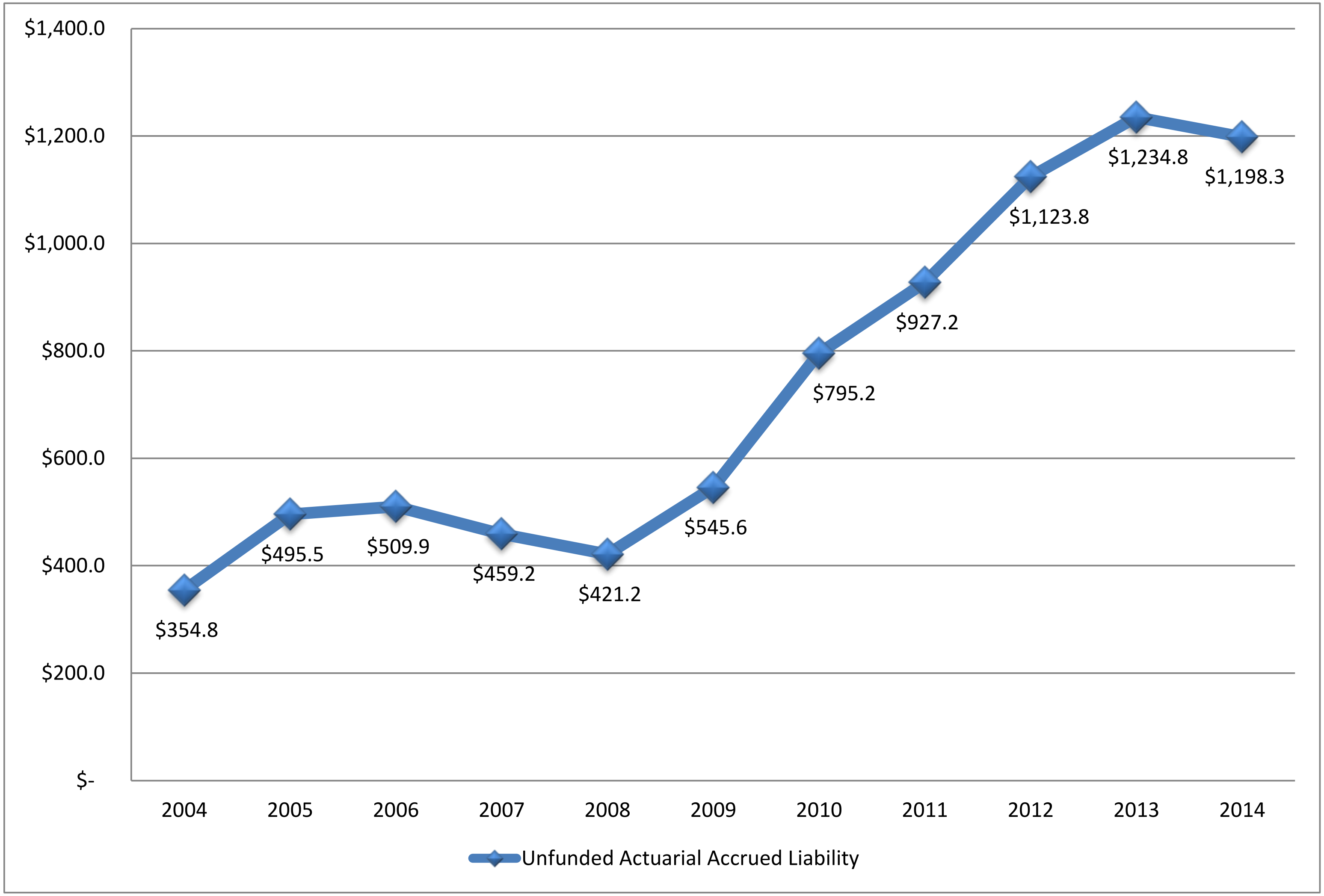
** For July 1, 2013, reflects the actuarial present value of the increased statutory contributions scheduled to occur July 1, 2014.*

Valuation Results - Comments

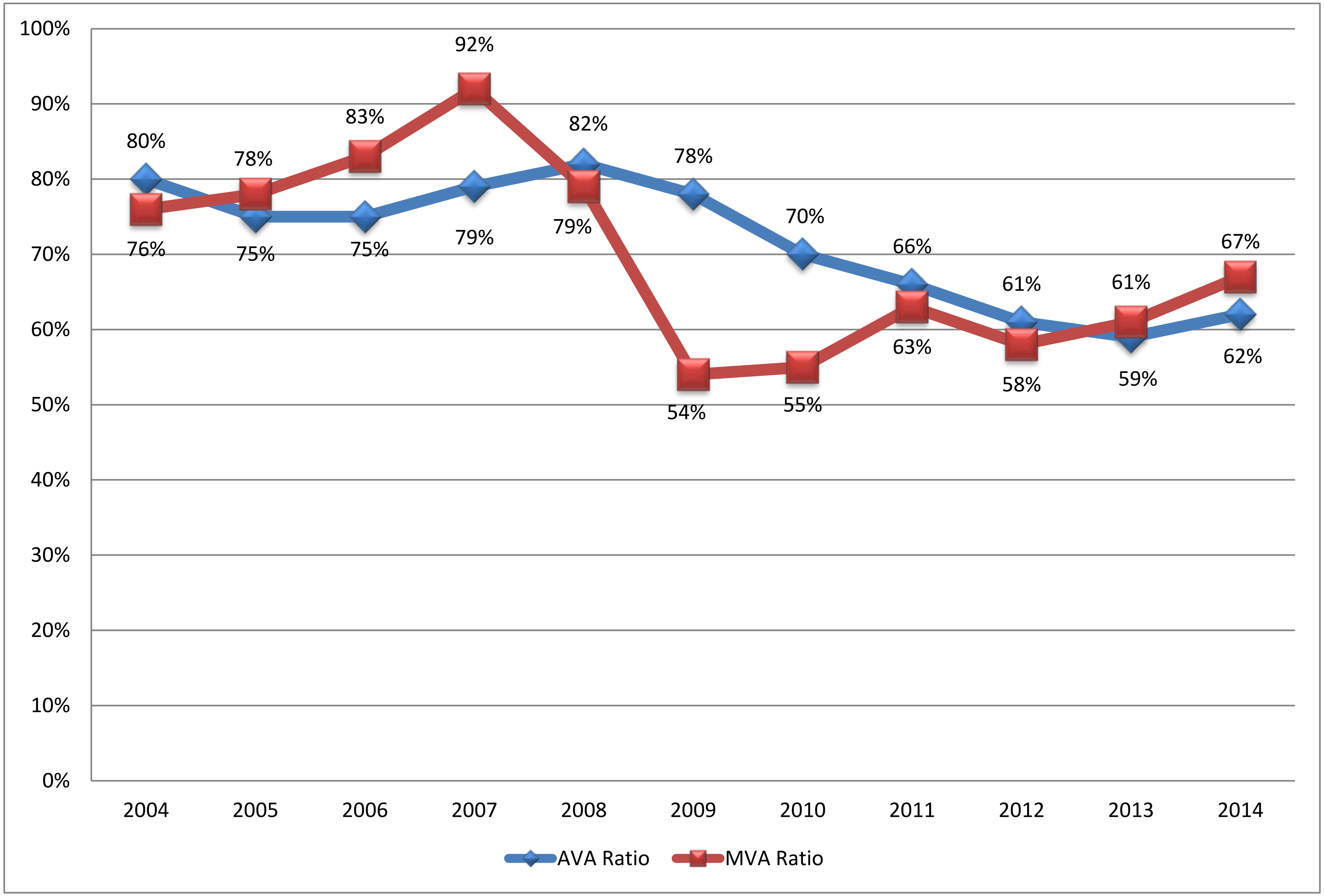
- The actuarial accrued liability increased from \$2.997 billion (as of June 30, 2013) to \$3.139 billion (as of June 30, 2014)
- The unfunded actuarial accrued liability (UAAL) decreased from \$1.235 billion to \$1.198 billion
- The funded ratio on an AVA basis increased from 59% to 62%
  - On a market value basis, the funded ratio increased from 61% to 67%
- The actuarially determined contribution (ADC) increased from 10.26% of payroll to 11.57% of payroll
  - This increase was primarily due to removing the adjustment for reflecting the value of the July 1, 2014, contribution rate increases from the ADC calculation
    - For FY15, the increases are now reflected in the employer normal cost and employer contribution rate
  - Compared to 12.75% employer contribution, results in a contribution sufficiency of 1.18%
  - The effective amortization period is 24 years

Unfunded Actuarial Accrued Liability

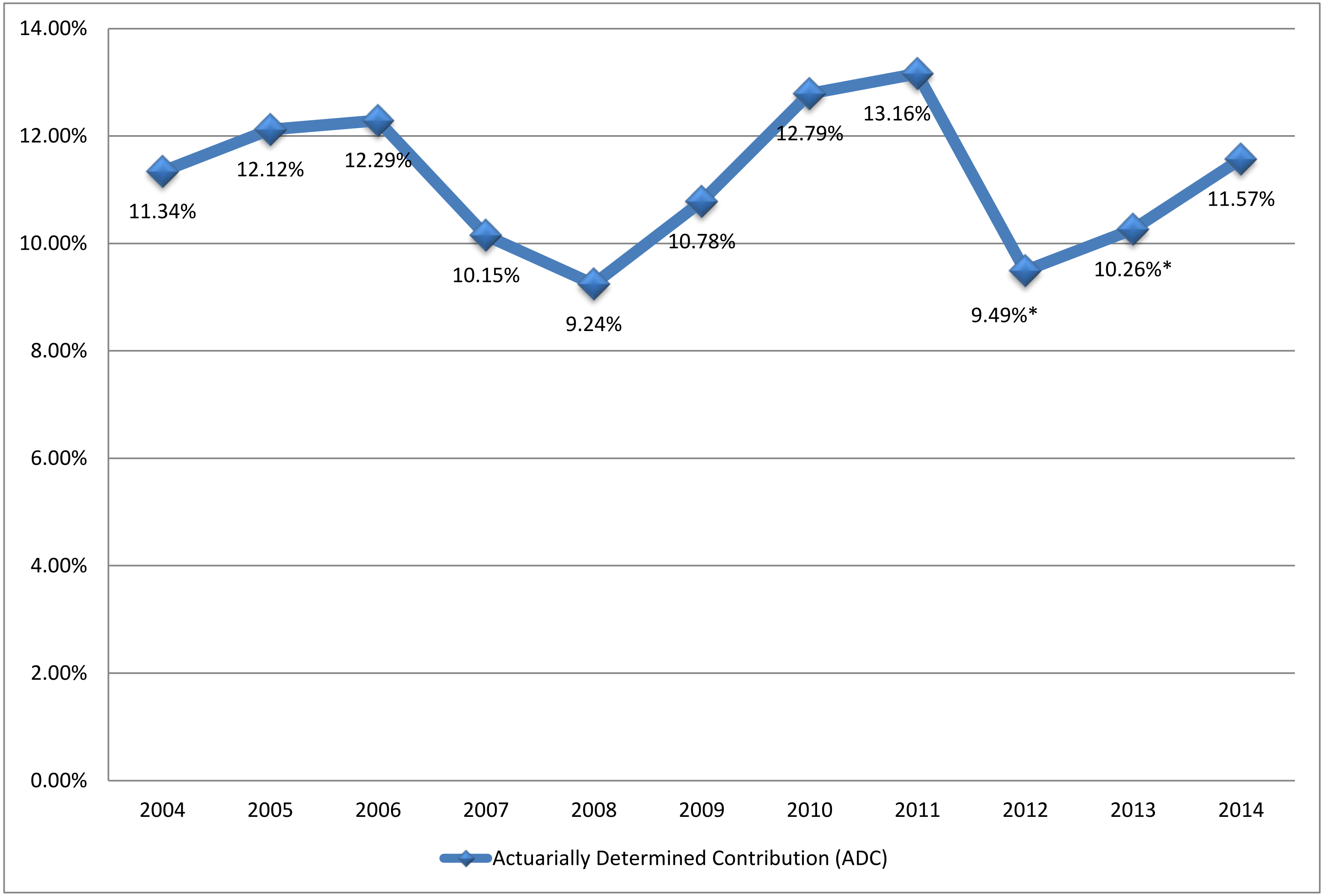
$ Millions



Funded Ratios



Actuarially Determined Contribution (ADC)



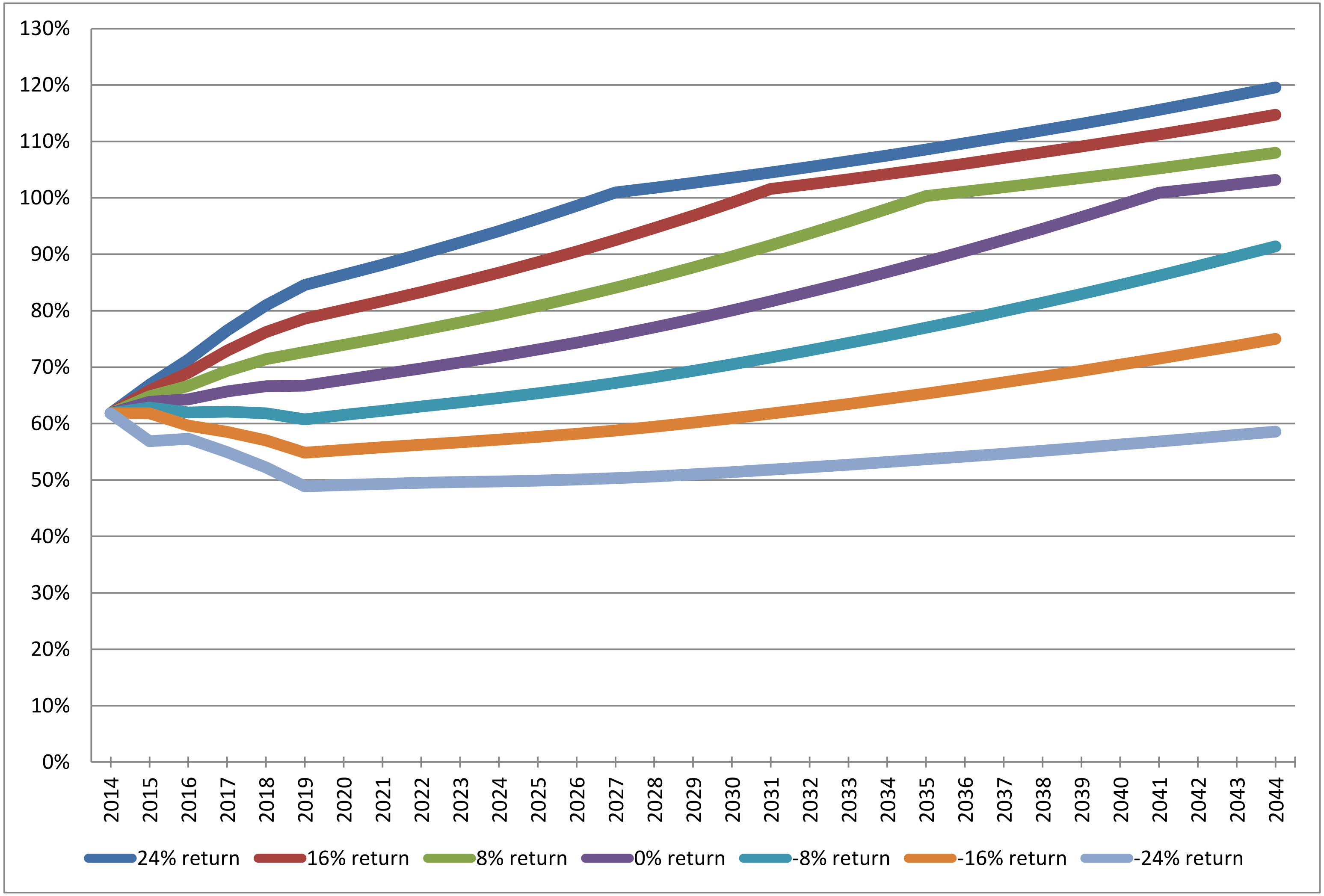
- Prior to 2005, the ADC calculation was based on a 20-year open amortization period.
- From 2005 - 2012, the calculation of the ADC was based on a 30-year open level percentage of payroll amortization.
- Beginning in 2013, the period is 30-year closed.

* Reflects the actuarial present value of contribution increases effective July 1, 2014.

Projections

- Projections of estimated funded ratios for 30 years
  - Based on FY15 investment return scenarios ranging from -24% to +24%
  - Assumes Fund earns 8% per year in FY16 and each year thereafter
  - Additional projections assuming Fund earns 7% or 9% per year every year
  - All other experience is assumed to emerge as expected
- Includes contribution rates from HB 1134
  - Member rate is 11.75% for FY15 and thereafter
  - Employer rate is 12.75% for FY15 and thereafter
  - Increases "sunset" back to 7.75% once the funded ratio reaches 100% (based on actuarial assets)

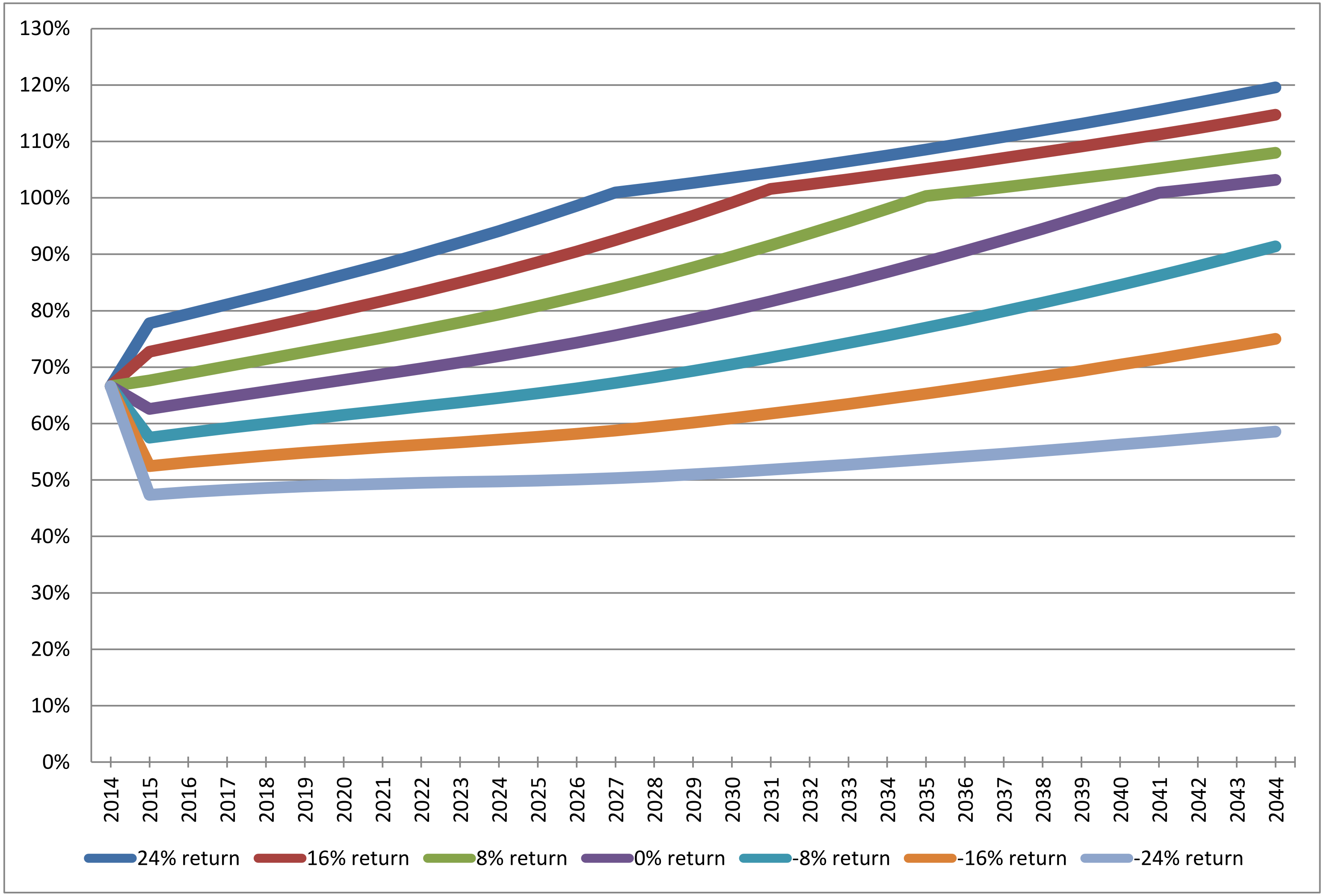
Projected Funded Ratios (AVA Basis)



Projected Funded Ratios (AVA Basis)

Valuation Year	24% for FY2015	16% for FY2015	8% for FY2015	0% for FY2015	-8% for FY2015	-16% for FY2015	-24% for FY2015
2014	62%	62%	62%	62%	62%	62%	62%
2015	67%	66%	65%	64%	63%	62%	57%
2016	71%	69%	67%	64%	62%	60%	57%
2017	77%	73%	69%	66%	62%	59%	55%
2018	81%	76%	71%	67%	62%	57%	52%
2019	85%	79%	73%	67%	61%	55%	49%
2024	94%	87%	79%	72%	65%	57%	50%
2029	103%	97%	88%	79%	69%	60%	51%
2034	108%	104%	98%	87%	76%	64%	53%
2039	113%	109%	104%	97%	83%	69%	56%
2044	120%	115%	108%	103%	91%	75%	59%

Projected Funded Ratios (MVA Basis)



Projected Funded Ratios (MVA Basis)

Valuation Year	24% for FY2015	16% for FY2015	8% for FY2015	0% for FY2015	-8% for FY2015	-16% for FY2015	-24% for FY2015
2014	67%	67%	67%	67%	67%	67%	67%
2015	78%	73%	68%	63%	58%	52%	47%
2016	79%	74%	69%	64%	58%	53%	48%
2017	81%	76%	70%	65%	59%	54%	48%
2018	83%	77%	71%	66%	60%	54%	49%
2019	85%	79%	73%	67%	61%	55%	49%
2024	94%	87%	79%	72%	65%	57%	50%
2029	103%	97%	88%	79%	69%	60%	51%
2034	108%	104%	98%	87%	76%	64%	53%
2039	113%	109%	104%	97%	83%	69%	56%
2044	120%	115%	108%	103%	91%	75%	59%

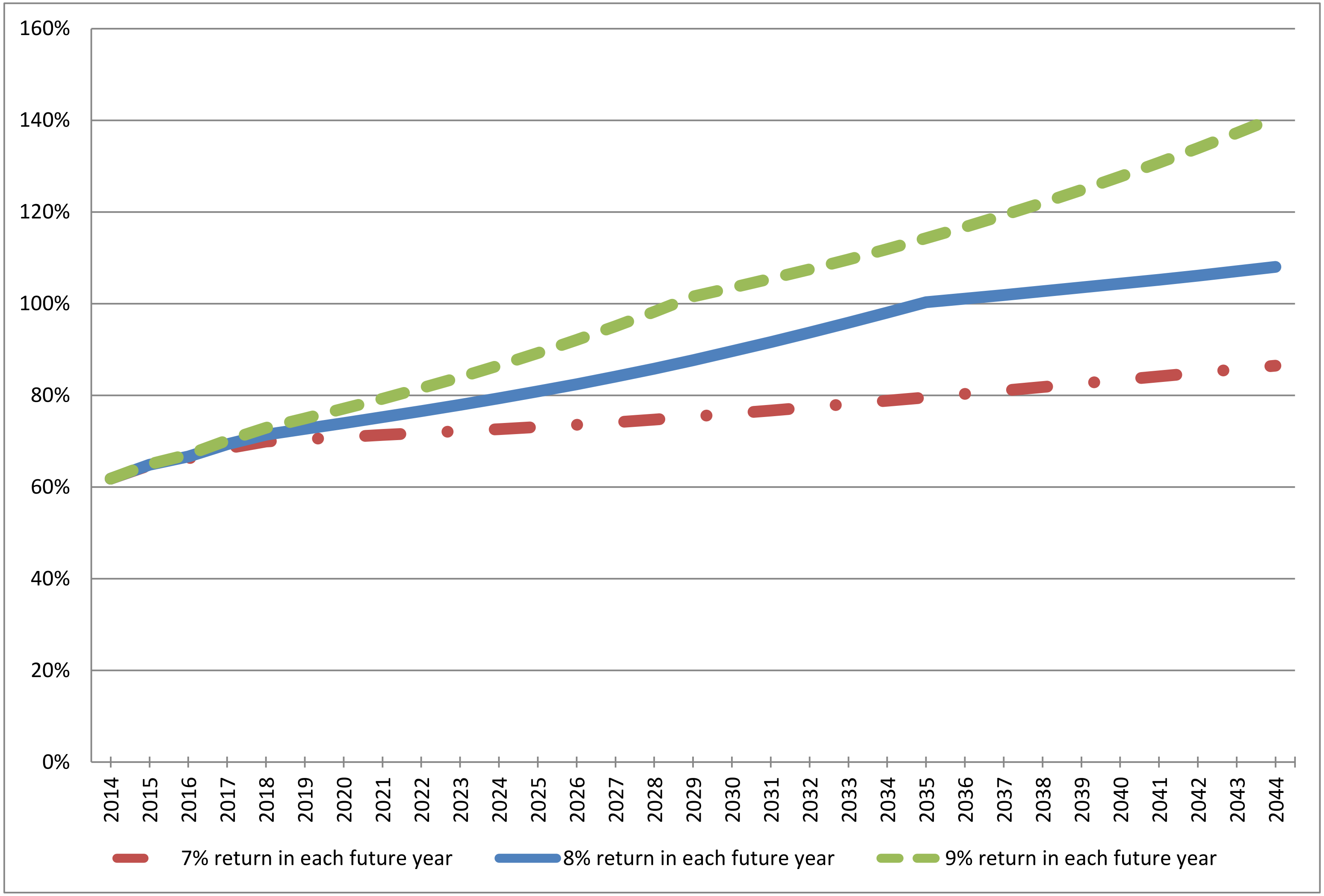
Projected Margin (AVA Basis)

Valuation Year	24% for FY2015	16% for FY2015	8% for FY2015	0% for FY2015	-8% for FY2015	-16% for FY2015	-24% for FY2015
2014	1.18%	1.18%	1.18%	1.18%	1.18%	1.18%	1.18%
2015	2.61%	2.26%	1.91%	1.57%	1.22%	0.87%	-0.82%
2016	3.84%	3.02%	2.20%	1.38%	0.55%	-0.27%	-1.09%
2017	5.41%	4.11%	2.81%	1.52%	0.22%	-1.08%	-2.38%
2018	6.83%	5.05%	3.27%	1.49%	-0.28%	-2.06%	-3.84%
2019	7.98%	5.71%	3.45%	1.18%	-1.08%	-3.34%	-5.61%
2024	11.22%	7.95%	4.69%	1.43%	-1.83%	-5.09%	-8.36%
2029	5.66%	12.07%	7.15%	2.23%	-2.69%	-7.61%	-12.53%
2034	7.26%	6.11%	12.28%	4.35%	-3.59%	-11.52%	-19.45%
2039	9.26%	7.82%	5.82%	11.07%	1.09%	-8.90%	-18.88%
2044	11.85%	10.02%	7.49%	5.67%	6.88%	-5.77%	-18.42%

* The projected margin is based on a 30-year closed period starting July 1, 2013. Once the period declines to 10 years remaining, the projected margin is based on a 10-year open period.

** If an overfunding exists, the surplus is amortized over a 30-year open period.

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



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

Valuation Year	7% Return in Each Future Year	8% Return in Each Future Year	9% Return in Each Future Year
2014	62%	62%	62%
2015	65%	65%	65%
2016	66%	67%	67%
2017	68%	69%	70%
2018	70%	71%	73%
2019	70%	73%	75%
2024	73%	79%	87%
2029	75%	88%	102%
2034	79%	98%	112%
2039	83%	104%	125%
2044	86%	108%	141%

Discussion Topics – GASB 67 and 68

Segal

- Overview of New Requirements
- GASB Objectives and Goals
- Requirements for Cost-sharing Plans
- Proportionate Share – Sample

Overview of the New GASB Requirements

- GASB 67 provides for accounting with respect to plans (replaces GASB 25)
  - Effective for TFFR June 30, 2014
- GASB 68 provides for financial reporting by employers (replaces GASB 27)
  - Effective for TFFR participating employers June 30, 2015
- Net pension liability reported on the employer's balance sheet and in the plan's notes to the financial statements
- 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

GASB Objectives and Goals

Financial Reporting Focus

- GASB establishes accounting and financial reporting, *not funding policies*
- Focus is on pension obligation, changes in obligation, and attribution of expense

Long-Term Nature of Governments

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

Employer-Employee Exchange

- Employer incurs an obligation to its employees for pension benefits
- Transaction is in context of a career-long relationship

Net Pension Liability

- Net pension liability (NPL) is required to be reported on the employer's balance sheet
  - Total pension liability (TPL) minus market value of assets
- NPL is calculated using:
  - Projected future benefits
    - Includes projected future service and salary increases
    - Includes the cost of ad hoc COLAs if "substantially automatic"
  - A new blended discount rate
    - Determined using projections of contributions and benefit payments
  - "Entry age" actuarial cost method
    - Most commonly used method
  - Market value of assets
    - Called "Fiduciary Net Position"
    - No actuarial smoothing

Accounting NPL will be more volatile than the current unfunded accrued liability (which will still be used for funding).

New Requirements for Cost-Sharing Plans

- Prior to GASB 68, employers of cost-sharing plans recognized an annual pension expense equal to the statutorily required contribution
  - Pension liabilities ("Net Pension Obligation/Asset" under GASB 27) arose from the difference between contributions required and contributions actually made
  - Employer's UAAL was not reported
- Now under GASB 68, employers will be required to recognize and disclose their proportionate share of the collective pension amounts for all benefits provided by the plan, which include:
  - Net pension liability
  - Deferred outflows of resources
  - Deferred inflows of resources
  - Pension expense

New Requirements for Cost-Sharing Plans *continued*

- When the collective total pension liability (TPL) is greater* than the market value of assets, each employer will need to report its proportionate share of the net pension liability (NPL) in its financial statements
- This is significant because the employer's proportionate share of the collective NPL will appear on the employer's balance sheet
  - Will appear with employer's other long-term liabilities for the first time
  - Not only will NPL be material relative to other liabilities, but it might be the largest long-term liability of the employer
  - Changes in NPL from year to year will be recognized as pension expense, with some deferrals being recognized as deferred outflows/inflows of resources
- Greatly expanded employer disclosures, including:
  - Description of the plan and assumptions
  - Policy for determining contributions
  - Sensitivity analysis of the impact on NPL of changes in liability discount rate
  - Changes in the NPL for the past 10 years
  - Development of long-term earnings assumption

* When TPL is less than the market value of assets, a Net Pension Asset results

Cost-Sharing Plans—Proportionate Share

- Determining an employer’s “proportionate share”
  - Basis should be **consistent with the way required contributions are determined**
  - “The use of the projected long-term contribution effort of the employer(s) … is encouraged.”
  - If “different contribution rates are assessed based on separate relationships that constitute the net pension liability … the determination of the employer’s net pension liability should … reflect those separate relationships.”
    - “For example, separate rates are calculated based on an internal allocation of liabilities and assets for different classes or tiers of employees”
- Employer’s proportion should be established as of the measurement date
  - Unless employer’s proportion is actuarially determined (in which case use date of the actuarial valuation)

TFFR plans to use covered payroll of active members as its basis for allocating the collective NPL.

Net Pension Liability – Collective TFFR

	June 30, 2014	June 30, 2013
Total Pension Liability at 8.00%	$3,138,799,773	$2,997,139,087
Net Plan Position (i.e., MVA)	2,090,977,056	1,839,583,960
Net Pension Liability (NPL)	1,047,822,717	1,157,555,127
Sensitivity to changes in discount rate		
• 1% decrease (7.00%)	$1,414,755,083	$1,511,142,356
• Current discount rate (8.00%)	1,047,822,717	1,157,555,127
• 1% increase (9.00%)	739,221,908	860,669,595

June 30, 2014, Proportionate Share – Sample

	Covered Employee Payroll	Proportionate Share	Allocated NPL
Fargo Public Schools	$63,192,777	10.894306%	$114,153,013
Bismarck Public Schools	61,729,312	10.642008%	111,509,377
West Fargo School	43,479,882	7.495843%	78,543,146
Grand Forks School	41,737,522	7.195464%	75,395,706
Minot School	40,092,868	6.911929%	72,424,762
⋮	⋮	⋮	⋮
Hebron School	1,090,884	0.188066%	1,970,598
Wishek School	1,090,646	0.188025%	1,970,169
⋮	⋮	⋮	⋮
Horse Creek Elementary School	34,500	0.005948%	62,324
Bakker Elementary School	33,500	0.005775%	60,512
Earl Elementary School	30,500	0.005258%	55,095
Grand Totals	$580,053,235	100.000000%	$1,047,822,707*

* Total allocated NPL may not match TFFR NPL due to rounding.

Discussion Topics – Experience Study Planning

Segal

- Purpose of an Experience Study
- Economic Assumptions
- Special Considerations for Salary Scale
- Demographic Assumptions

Purpose of an Experience Study

- Each actuarial valuation involves a projection of benefits expected to be paid in the future to all members of TFFR
  - The projection of benefit payments is based on assumptions of future events and conditions
- Assumptions are grouped into two broad categories:
  - Demographic assumptions – primarily selected on the basis of recent experience
  - Economic assumptions – rely more on a long-term outlook of expected future trends
- Gains and losses result from actual experience that differs from expected
  - A pattern of gains or losses with respect to one or more assumptions is the basis for recommended changes to the assumptions
- Actuarial experience studies are undertaken periodically and serve as the basis for recommended changes in actuarial assumptions and methods

Economic Assumptions

- Economic assumptions include:
  - Inflation
  - Salary scale
  - Investment rate of return
  - Payroll growth rate
- "Building block" approach is the common method to develop economic assumptions
  - Inflation is the basis for all economic assumptions
    - Investment rate of return = inflation + expected risk premium for each asset class
    - Salary scale = inflation + productivity + merit increases
    - Payroll growth = inflation + productivity
- Recommended investment return assumption will be based on weighted average "real" returns using TFFR's target asset allocation and capital market assumptions from TFFR's investment consultant
- Payroll growth assumption represents the expected annual increase in total covered payroll from one year to the next
  - Typically determined with respect to a level active population
  - However, North Dakota is experiencing growth in residents and school-aged children, which is expected to lead to additional schools and teachers

Considerations For Salary Increase Assumption

- Salary increase assumption will primarily be based on observations from historical data relative to increases in pay for existing active members over the experience period
  - Data will be analyzed based on age and service to determine the best “fit”
  - Experience data is adjusted for actual inflation to isolate actual increases due to merit and productivity
- We will also analyze “end of career” salary increases
  - Attempt to identify additional increases, if any, that occur for members leading up to retirement
  - May result in additional load factor(s) applied within salary scale assumption or consideration of plan design changes

Demographic Assumptions

- Demographic assumptions should reflect the expected occurrences of various events among participants
  - A reasonable assumption is one that is expected to model the contingency being measured and not expected to produce significant gains or losses
- Actual experience period data is analyzed and compared to expected outcomes based on existing assumptions
  - Ratios of “actual to expected” are generated based on subsets such as age, service, gender, etc.
    - A ratio of 100% means the actual experience was exactly equal to the expected experience
    - Ratios above and below 100% are analyzed to determine whether assumption should be changed
  - Recommended assumptions are formulated to achieve desirable ratios of “actual to proposed”
- Mortality assumption should reflect anticipated improvement in life expectancies and can be accomplished by:
  - Using a static projection
    - E.g., all mortality rates “projected” to 2020
  - Using a generational approach
    - I.e., mortality rates in the following year reflect one year of improvement, rates 20 years from now reflect 20 years of improvement, etc.
    - E.g., the mortality rate at age 65 is less for someone currently age 35 as compared to someone currently age 60

Discussion Topics – DB vs. DC

Segal

- Definition of Retirement Plan Risks
- Comparison of DB and DC Plans
- Hybrid Plan Designs
- Examples and Recent Trends

Defined Benefit Versus Defined Contribution

- 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
- Types of plan risks:
  - Investment risk
  - Inflation risk
  - Contribution risk
  - Longevity risk
- In a DB plan, the employer bears these risks
- In a DC plan the employee bears these risks

Definition of Risks

- Investment Risk
  - Rate of return on assets
  - In DB plan, employer bears all the investment risk
  - In DC plan, employee bears all the investment risk
- Inflation risk
  - Cost of living before and after retirement
  - DB plans usually based on final average salary, so employee has limited cost of living risk
  - Common feature in public sector DB plans is to provide some form of post-retirement benefit increase, so employee has some protection against inflation in retirement
- Contribution risk
  - Level and volatility of annual contributions
  - In DB plan, employer bears this risk
  - In DC plan, contributions are a percentage of salary
    - If investment returns are poor, employees may need to make additional contributions
- Longevity risk
  - Outliving retirement assets
  - In DB plan, benefits paid as life annuity, so employer bears all risk
  - In DC plan, benefits based on account balance, so employee bears all risk

Risk and Features of Different Retirement Plan

Employer and Employee Risk of Different Designs

	Defined Benefit										Defined Contribution	
	Flat Dollar		Career Average		Final Average		Hybrid		Lump Sum Options		401(a), 401(k), 403(b)	
	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE	ER	EE
Economic Risks												
Investment Risk	4	1	4	1	4	1	3	2	3	3	0	4
Inflation risk	0	4	1	3	3	2	2	2	2	2	1	3
Contribution Risk	3	1	4	1	4	1	3	1	3	1	1	1
Longevity Risk	4	0	4	0	4	0	3	2	3	4	0	4
Non-Economic Risks												
Accounting Risk	3	0	3	0	3	0	3	0	3	0	0	0
Features												
Rewards older/longer service employees	4		3		3		2		2		1	
Planning Tool	2		2		2		1		1		1	
Hiring Attractiveness	2		2		2		3		3		3	

Risks	Features
0 None	Not applicable
1 Low	Minor importance
2 Somewhat low	Somewhat minor importance
3 Somewhat high	Relatively important
4 High	Very Important

Comparison of DB and DC Plans

Objective	Defined Benefit	Defined Contribution
Funding Certainty	Plan liabilities change based on actuarial assumptions, e.g., future salary increases, investment earnings, employee turnover.	Employer liability is fulfilled annually as contributions are made to employee accounts based on a percentage of payroll.
Predictable Contributions	Annual contributions may vary from year-to-year based upon actuarial assumptions. Rates may be set by statute to increase predictability. (These rates may need to be changed periodically.)	Annual cash expenditures are more predictable as they are based on a set percentage of employee salaries.
Recruitment Tool	Some portability through service credit purchase or return of employee contributions.	Assets are portable.
Reward Career Employees	Benefits are typically based on final year(s) salary, rewarding career employees.	Benefits are based upon accumulated contributions and earnings.
Expenses	Expenses include actuarial valuations, investment fees, and administrative fees. Employer pays these fees.	Employee expenses may be lower than a defined benefit plan because no actuarial valuations are necessary and investment fees are shifted to the employee. Employee education costs may be higher.

Comparison of DB and DC Plans

Objective	Defined Benefit	Defined Contribution
Benefit Potential	Benefits paid at retirement are for life and are guaranteed by the plan's benefit formula.	Benefits paid at retirement are based on contributions and earnings. The final retirement benefit can be eroded by pre-retirement distributions.
Understandable Benefits	Benefits require explanation because they are based on a set of variables, e.g., future earnings and year of service at retirement.	Benefits are based on accumulated contributions plus earnings at the time of retirement. Market fluctuations and life expectancy make it difficult to manage retirement benefit.
Access to Benefits While Employed	Benefits may not be withdrawn while actively employed.	Benefits may be withdrawn or loaned under certain circumstances.

Hybrid Plans

- A Hybrid plan is some combination of the features of a DB plan and the features of a DC plan
- Reasons Hybrid plans are considered:
  - Lower employer costs
  - Reduce employer contribution volatility
  - Provide greater benefit flexibility, especially for short service employees
  - Make the plan more understandable
  - Modify the risk characteristics of the benefit offerings

Hybrid Plan Considerations

- DB and DC plans have very different approaches to benefit design
  - DB plans focus on benefit security
  - DC plans focus on wealth accumulation
- Shifting of plan risks may have unintended consequences
- There is no magic equivalent plan (DB = DC)
  - Difference rests in risk and performance

Menu of Plan Designs

Basic Plan Designs

Defined Benefit

- Final Average Salary
- Career Average Salary
- Flat Benefit Accruals

Defined Contribution

- Traditional DC
- 401(k)
- 403(b)
- 457
- Matching plans

Hybrid Plan Designs

- DB plans with lump sum options
- Combined plans
- Crossover plans
- Cash balance plans

Combined Plan

- Have both defined benefit and defined contribution components
- Attributes:
  - Allocates portion of the plan risk to the member
  - Provides additional benefit flexibility to the member
  - Lowers future contributions for the plan sponsor
  - Maintains a core DB for the base retirement benefit
  - Provides a platform for death and disability benefits
- Variations:
  - Defined benefit is primary plan with defined contribution to enhance portability
  - Defined contribution is primary plan with defined benefit as "safety net" plan
  - ND PERS "PEP" Provision – enhanced return of contribution withdrawal benefits, payable as a lump sum.

Crossover Plan

- Members can choose among defined benefit, defined contribution, or combined plan at hire date
  - Example – Ohio State Teachers Retirement System
- Members have option to “crossover” to another plan after 3 or 5 years
  - In Ohio State Teachers Retirement System, members default to DB plan unless they affirmatively elect another plan

Cash Balance Plan

- Defined benefit plan that looks like a defined contribution plan
- Hypothetical account balance credited with percentage of salary and interest each year
- For example:
  - Annual credit to account balance of 5% of salary
  - Annual interest on account balance equal to 10-year treasury rate plus 1.5%
  - Benefits paid at retirement or termination based on value of hypothetical account balance
- Actual contributions based on annual valuation and expected to be less than annual credit plus interest

Examples of Public Sector Hybrid Plans

<table>
<tr><th>Combined Plans</th><th>Cash Balance</th></tr>
<tr><td>

Washington

- Employee choice of:
  - Plan 2: DB–2% of pay plan
  - Plan 3:
    - » DB–1% of pay plan
    - » DC Employer contribution: 8%
Employee contribution: 5% – 15%

Oregon

- Combined DB/DC plan
- Tier II:
  - DB 1.5% of pay plan employer funded
  - DC 6% employee funded

Utah (July 2011)

Employee Choice of:

- Tier II:
  - DB 1.5% of pay plan
  - 10% cap on employer contributions
- DC funded by “excess” employer contributions

  OR
- DC 10% employer contributions

</td><td>

Nebraska (January 1, 2003)

- Employees contribution: 4.8%
- Employer contribution: 7.5%
- Investment return guarantee:
  - At least 5% annual return
  - Potential for additional Board approved amount
  - Total not to exceed 8%

</td></tr>
</table>

Transition Issues

Changing from a defined benefit to a defined contribution plan results in transition issues that must be addressed

- Unfunded liabilities could remain and may be amortized over a shorter period, driving up short-term costs
- If DC plan is participant-directed, employee education is needed
- Creating a new “tier” adds administrative complexity
- Allowing choice between plans introduces anti-selection issues
- Death and disability benefits cannot be provided by a DC plan
- Workforce management is difficult with DC plan

Glossary

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Pensioners: The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Actuarial Cost Method: A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the Actuarially Determined Contribution.

Actuarial Gain or Actuarial Loss: A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., The plan's assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.), multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Glossary

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the ADC and the NPL.

Actuarial Value of Assets: The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Glossary

Amortization Payment: The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Fund is calculated including:

(a) Investment return - the rate of investment yield that the Fund will earn over the long-term future;

(b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates - the rate or probability of retirement at a given age;

(d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;

(e) Salary increase rates - the rates of salary increase due to inflation and productivity growth

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Glossary

Experience Study: A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

Funding Period or Amortization Period: The term “Funding Period” is used in two ways. First, it is the period used in calculating the Amortization Payment as a component of the ADC. Second, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and GASB 68: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.

Investment Return: The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

Margin: The difference, whether positive or negative, between the statutory employer contribution rate and the Actuarially Determined Contribution (ADC) as defined by GASB.

Net Pension Liability: The Net Pension Liability is equal to Total Pension Liability minus Plan Fiduciary Net Position.

Glossary

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability, or retirement.

Plan Fiduciary Net Position: Market value of assets.

Total Pension Liability: The actuarial accrued liability based on the blended discount rate as described in GASB 67/68.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

Questions?

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MEMORANDUM

TO: TFFR Board

FROM: Fay Kopp

DATE: October 16, 2014

SUBJ: Government Accounting Standards Board (GASB) Information

Kim Nicholl, Segal Company, will update the Board on GASB 67 and 68 standards, information being developed, and related issues.

MEMORANDUM

TO: TFFR Board

FROM: Fay Kopp

DATE: October 16, 2014

SUBJ: Experience Study Planning

Periodic reexamination of plan assumptions is an essential part of a pension plan's actuarial processes. Forward-looking assumptions about plan demographics, wages, inflation, and investment returns drive the measurement of pension liabilities and costs. As a general rule, most plans conduct an experience study every three to five years, an interval that should help ensure that assumptions remain appropriate in the face of evolving conditions and experience.

Kim Nicholl, Segal Company, will discuss the Experience Study that Segal is conducting for TFFR. The Experience Study will cover the 5 year period from 2009 – 2014 and will compare actual changes in liabilities with expected changes in liabilities according to each of the various actuarial assumptions. The analysis will include recommendations regarding all actuarial assumptions.

The results and recommendations from the Experience Study will be presented to the Board in about 4 – 6 months.

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **October 16, 2014**

SUBJ: **Board Education: Defined Contribution and Hybrid Plans**

Kim Nicholl, Segal Company, will provide a brief overview of various types of retirement plans including defined benefit, defined contribution, and hybrid plans. She will also comment on potential costs and implications of changing plans.

I have included a copy of a 2011 research study conducted by the National Institute on Retirement Security (NIRS) which also provides background on various types of retirement plans and issues for consideration.

Enclosure

NATIONAL INSTITUTE ON
Retirement Security
Reliable Research. Sensible Solutions.

Milliman



Decisions, Decisions:

Retirement Plan Choices for Public Employees and Employers

By Mark Olleman, FSA, MAAA, EA, and Ilana Boivie

September 2011

ABOUT THE AUTHORS

Mark Olleman
Mark Olleman is a Consulting Actuary and Principal in the Seattle office of Milliman, Inc. He has been with the firm since 1990 providing actuarial services for Milliman's defined benefit clients from Alaska to Texas. Mr. Olleman is a frequent speaker on public employee retirement issues and has authored several articles. He works with his clients on a wide variety of services including actuarial valuations, economic and demographic experience studies, asset/liability modeling, cost projections, plan design, funding strategies, and communications. He is a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, and an Enrolled Actuary. He has a Bachelor of Science degree from Whitworth University in Mathematics and Chemistry.

Ilana Boivie
Ilana Boivie is Director of Programs for the National Institute on Retirement Security. An economist, she conducts original research and analysis regarding U.S. retirement issues, and assists with the overall strategic direction of NIRS' programming. She was the lead author of *Pensionomics: The Economic Impact of State and Local Pension Plans*, and has been instrumental in NIRS' research and educational programs for over three years. Ms. Boivie is a frequent speaker on pension and economic matters, and has testified before policymakers regarding her research. She holds a Master of Arts in economics from New Mexico State University, and a Bachelor of Arts in English from Binghamton University, where she graduated Magna Cum Laude.

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

In 2008, 14.7 million active state and local government employees had defined benefit (DB) pension coverage through their employers.[1] DB pensions play an important role in the human resource strategies of government employers. DB pensions have been shown to be an effective retention tool, and government employers are well suited to offer them. At the same time, DB pensions are highly valued by employees in the public sector. Pensions' staying power in the public sector stems from the fact that these systems serve employees, employers, and taxpayers well.[2]

In recent years, however, a handful of states have begun to offer public employees a choice between a traditional DB pension and a defined contribution (DC) account as their primary retirement plan.

This paper studies those states that offer employees a choice between primary DB and DC plans, and finds that:

- When given the choice between a primary DB or DC plan, public employees overwhelmingly choose the DB pension plan.
- DC plans are less cost efficient than DB plans, due to lower investment returns, and the lack of longevity risk pooling.
- Some states have considered moving from a DB-only to a DC-only structure in an attempt to address an unfunded liability. Making this shift, however, does nothing to close any funding shortfalls, and can actually increase retirement costs.
- Traditionally, employers bear most of the risk in DB plans, and employees bear most of the risk in DC plans. The hybrid plan for new employees in Utah provides a unique case study, in that it has capped the DB funding risk to the employer, and shifted the rest to employees.

The experience in the public sector thus far indicates that public employees highly value their DB pension benefits. This fact, coupled with the fact that DB pensions remain the most cost-effective way to fund a retirement benefit, suggests that the public sector is unlikely to mimic the trend away from DB pensions in the private sector.

INTRODUCTION

DB Plans and DC Plans Are Very Different

Defined benefit (DB) pension plans are designed to provide employees with a predictable monthly benefit for life. 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 his or her career. This plan design is attractive to employees because of the security it provides. Employees know they will have a steady, predictable income that will enable them to maintain a stable portion of their pre-retirement income.

DB plans are pre-funded retirement systems. That is, employers—and, in the public sector, employees—make contributions to a common pension trust fund over the course of each employee's career. These funds are invested by professional asset managers whose activities are overseen by trustees and other fiduciaries. The earnings that build up in the fund, along with the dollars contributed while working, pay for the lifetime benefits an employee receives when s/he retires.

Defined contribution (DC) plans, such as 401(k) plans, function very differently than DB plans. First, there is no implicit or explicit guarantee of retirement income in a DC plan. Rather, employees (and usually employers) contribute to the plan over the course of a worker's career. Whether the funds in the account will ultimately be sufficient to meet retirement income needs will depend 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 number of years retirees will live after they leave work.

DC plans consist of separate, individual accounts for each participant. Plan assets 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 at retirement, how to withdraw the funds.

Along with differences in contributions and investments during employees' careers, another important difference between DC and DB plans becomes apparent at retirement. Unlike in DB plans, where retirees are entitled to receive regular, monthly pension payments for life, in DC plans it is typically left to the retiree to decide how to spend one's retirement savings. Research suggests that many individuals struggle with this task. Since they find it difficult to estimate how long they will live, they either draw down funds too quickly and run out of money, or hold onto funds too tightly and self-impose a lower standard of living as a result.[3] In theory, employers that offer DC plans could provide annuity payout options, but in practice they rarely do.[4] See Table 1.

Public Plan DB/DC Choices

Unlike employees in the private sector, who have seen a drastic decrease in DB plan coverage, most public employees still participate in a DB plan. For example, a 2008 study by the Bureau of Labor Statistics (BLS) showed that whereas private sector participation in DB plans dropped from 76% of full time employees in 1986 to 24% in 2008, public employee

Table 1. **Selected Differences Between DB Plans and DC Plans**

	Defined Benefit Plan (Traditional Pension)	Defined Contribution Plan (such as 401(k), 403(b), 457)
Contributions	In the public and private sectors, contributions are made on behalf of each employee by the employer. In the public sector, many pensions are "contributory," meaning that employees also contribute to the plan out of their own paychecks.	Employees make their own contributions to their savings account at whatever rate they choose. In the private sector, employers will often make a certain match—for example, 50 cents on the dollar up to 6% of pay—but they are not required to contribute at all. In the public sector, employers that offer a choice between DB and DC often contribute the same amount to the DC accounts as to DB accruals.
Investments	Contributions for all employees are pooled, and invested by professional asset managers in a diversified portfolio of assets—stocks, bonds, real estate, etc.	Investment portfolios consist of individual accounts for each employee. Employees make all investment decisions themselves, and can choose from a range of investment options offered.
Amount of Money in Retirement	The monthly benefit is determined by a set calculation, usually based on years of service and pay at the end of one's career.	The money available in retirement is simply the amount that one has accumulated in the savings plan, through contributions and investment earnings.
Lifetime Income	Payouts are provided as a monthly income stream that is guaranteed for the remainder of the retiree's life.	Plans are not required to offer a lifetime income option, and typically pay out benefits as a one-time lump sum.
Supplemental Benefits	Spousal protections, disability benefits, and cost of living adjustments are common.	Supplemental benefits are not applicable, and generally not available. If provided, they require extra contributions to some structure outside the DC plan.

participation in DB plans only dropped from 93% of full time employees in 1987 to 88% in 2008.[5]

Thus, while private sector DB coverage has declined in the last two decades, public sector coverage has remained relatively stable;[6] most state and local government employees still provide DB pension coverage to their employees. Yet a handful of states have begun to offer public employees a choice between a traditional DB pension and a DC account as the primary retirement plan.

This paper analyzes the following questions:

- When given the choice, what do public employees choose: the DB pension plan or a DC plan?
- What happens when employees choose their own investments?
- Can employers choose to offer meaningful supplemental benefits to DC members?
- What are the implications of an employer choosing to change from a DB to a DC plan?
- What are the implications for risk sharing in each of the systems, and is there a way to shift some of the risk to employees under the DB system?
- Finally, do employers give employees the chance to choose a second time?

This paper looks at the recent experience of statewide retirement systems that offer a choice between DB and DC plans, and seeks to provide some answers.

To conduct the study, we requested information directly from the retirement systems that allow new hires to choose between DB and DC. These systems provided the actual statistics of what percent of members have chosen each option. We also asked for other important provisions relating to benefits and contributions. Finally, each system reviewed their portion of our final report to ensure its accuracy. This primary source material provides a valuable insight into what really happens when public employees are allowed to choose between DB and DC.

OVERWHELMINGLY, PUBLIC EMPLOYEES CHOOSE THE DB PLAN

Although there is a common perception that DC plans may be more attractive to new employees than DB plans, relevant research seems to show the opposite—especially among state and local employees. Recent public opinion polling finds that DB plans are highly valued by public employees and are an important consideration for those who choose a career in public service.

A 2006 nationally representative survey indicated that public employees were much more favorable to traditional DB pensions and much less likely than other workers to express a preference for 401(k)-type plans.[7] When asked about proposals to switch public employees out of DB plans and into 401(k)-type plans, public employees were strongly opposed.[8] A 2003 survey also found that public employees place a very high value on their pension programs, with almost two-thirds of public sector employees stating a preference in favor of DB pensions as compared with DC plans.[9]

So, what do public employees really prefer? Seven statewide systems have been giving new hires the choice between participating in a DB plan or a DC plan for various periods over the last 12 years. These systems are Colorado Public Employees' Retirement Association, Florida Retirement System, Montana Public Employee Retirement Administration, North Dakota Public Employees Retirement System, Ohio Public Employees Retirement System, State Teachers Retirement System of Ohio, and South Carolina Retirement Systems. Tables 2 and 3 and Figure 1 summarize the experience of these systems, all of which allow their members to choose between a DB plan and a DC plan. Ohio and Washington members also have the choice of a "combined" plan, where employer contributions fund a DB plan and employee contributions fund a DC plan. Washington state members do not have the option of an all-DC plan.

Across the board, the experience of these seven systems indicates that public employees overwhelmingly choose the DB plan. In the most current year, North Dakota's DB plan has the highest take up rate at 98%; the lowest DB take up rate is in Florida, which still saw a full 75% of employees opting for the DB pension. This means the percentage of new employees electing DC plans currently ranges from 2% in North Dakota to 25% in Florida.

The trend of overwhelming DB coverage in states with a choice has been consistent over time. As shown in Figure 1, the DB take up rates in all of these states have been above 70% in all years, and three of the states have take-up rates of 90% or more during most years studied.

It should be noted, however, that many employees who do not actively elect one plan or another are defaulted into the DB plan. Unlike the private sector which uses defaults into 401(k) savings plans to build plan participation rates, most workers in the public sector are covered by a retirement plan as a condition of employment. Defaulting employees into the traditional DB plan is similar to a private-sector employer investing employee contributions into an appropriate investment allocation with the intent of reducing risk to the participant.

The overwhelmingly high take-up rates, then, could be at least partially driven by inertia on the part of employees, a large number of whom do not make an affirmative choice. In most states with choice, members must actively choose the DC plan; it is often the case that many DB members never submit an election and are placed in the DB plan by default.

Table 2. **New Hire Elections in Most Recent Complete Year***

System	DB Plan Enrollments	DC Plan Enrollments	Combined Plan Enrollments
Colorado Public Employees' Retirement Association	88%	12%	Not offered
Florida Retirement System	75%	25%	Not offered
Montana Public Employee Retirement Administration	97%	3%	Not offered
North Dakota Public Employees Retirement System**	98%	2%	Not offered
Ohio Public Employees Retirement System	95%	4%	1%
State Teachers Retirement System of Ohio	89%	9%	2%
South Carolina Retirement Systems	82%	18%	Not offered

"Not offered" means enrollment in a combined DB/DC plan is not offered.

**Data for Colorado, North Dakota, and Ohio PERS are for January 2010 through December 2010. Data for Florida, Montana, STRS Ohio, and South Carolina are for July 2010 through June 2011.*

*** One new employee out of the 63 eligible joined the North Dakota DC plan in 2010.*

Three states separate out DB take-up rates by active choice and default. See the Technical Appendix for more information on default and elected DB take-up rates by state.

Another possible reason that public employees may go with the DB default is that their preferences for DB pensions are "revealed" preferences—that is, they reflect a preference realized by deliberately seeking out an employer that offers this type of plan. For instance, a Florida survey found that "up to 41% of the defaulters may be using this option as their active election in the belief that by defaulting there could be no mistakes made in their plan choice."[10]

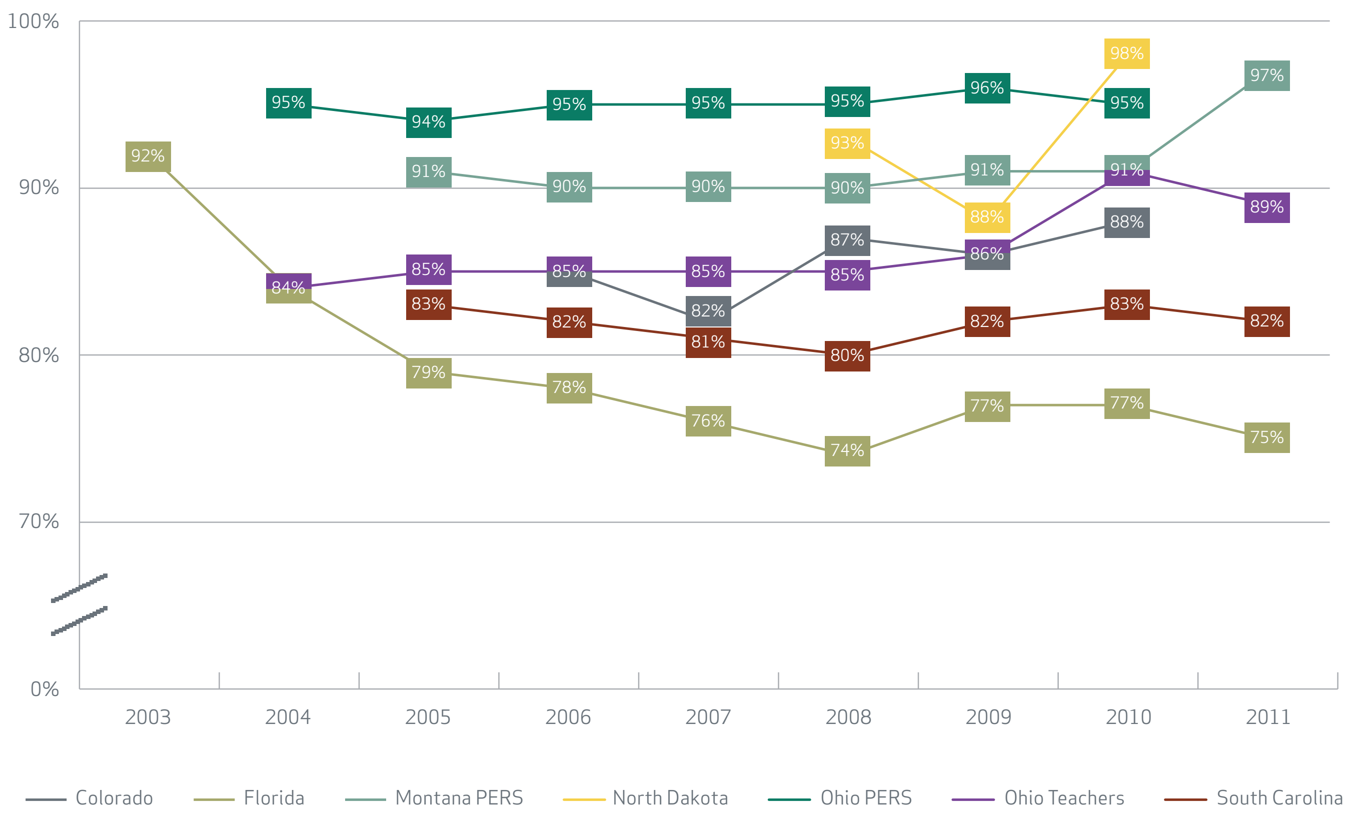
The experience in Washington PERS is illuminating as well. This is the only choice state in which the traditional DB plan is not the default; the default option is a combined DB and DC plan. Table 3 shows that an impressive 68% of new members in Washington have actively chosen an all-DB plan over the default of a combined DB and DC plan, and only 11% of new hires actively selected the combined DB and DC plan. This suggests that most public employees in other states that are "defaulted" into the DB plan would actively choose DB even if it were not the default.

Table 3. **Cumulative Washington PERS New Hire Elections, March 2002 through June 2011**

DB Plan Active Enrollments	Total Elections for DB & DC Combined Plan	Combined DB & DC Plan by Default	Combined DB & DC Plan Active Enrollments
68%	32%	21%	11%

Figure 1 shows that most of these DB/DC choice plans have had relatively stable election percentages in the short time they have existed. That is, the vast majority of public employees have consistently chosen the DB option. However, this is not to say that members will continue to make the same choices in the future. The stock market declines of 2000 to 2002 and 2008 have certainly influenced many members. It is possible that the future of the stock market, or the experiences of people retiring with only DC plans, could influence future member choices.

Figure 1. **Total DB Elections over Time**



Please see the Technical Appendix for detailed information on each state's take-up rates over time.

WHEN EMPLOYEES CHOOSE THEIR OWN DC INVESTMENTS, RETURNS ARE LOWER

Research indicates the average employees directing their own investments tend to earn lower investment returns than statewide DB systems, for a variety of reasons.

DB plans tend to achieve higher investment returns than DC plans because assets are pooled and professionally managed. 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 reduce these costs will require fewer 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 0.25% of plan assets for public sector DB plans. By comparison, asset management fees for private sector 401(k) plans range from 0.60% to 1.70% of assets. Thus, private DC plans suffer from a 0.35% to 1.45% fee disadvantage, as compared with public DB plans.[11] 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 1% difference in fees compounds to a 24% reduction in the value of assets available to pay for retirement benefits.[12]

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. Research has found that DB plans have broadly diversified portfolios and managers who follow a long-term investment strategy.[13] On the other hand, individuals in DC plans, despite their best efforts, often fall short when it comes to making good investment decisions. Thus, it should not be surprising that researchers find a large and persistent gap when comparing investment returns in DB and DC plans. Munnell and Sunden put the difference in annual return at 0.80%.[14] A 2007 report from the global benchmarking firm, CEM, Inc., concluded that between 1998 and 2005, DB plans showed annual returns 1.80% higher than DC plans, largely due to differences in asset mix.[15] And Towers Watson found that, between 1995 and 2006, DB plans outperformed DC plans by 1.09%, on average.[16] In 2006 and 2007, DB plans outperformed DC plans by an average of about 1.0% per year based on asset-weighted returns, while in 2008, DB plans outperformed DC plans by roughly 2.7%.[17]

The experience of two states, Nebraska and West Virginia, are consistent with this research.

Nebraska's state and county employees hired between 1964 and 2003 had only a DC plan. During the same period, Nebraska maintained separate DB plans for its school employees, judges, and state patrol. Over the 20 years leading up to 2002, the average return in the DB plans was 11% and the average return in the DC plans was between 6% and 7%. One reason for this large difference is that nearly 50% of DC member contributions were invested in the stable value fund, which was the default for members not making a specific investment election. Although the stable value fund is very conservative and the investor's balance will not decrease, the investor also has a lower expected rate of return. Partially due to the lower returns, employees were receiving a replacement ratio of their pre-retirement income closer to 30% rather than the projected 50% to 60%. Nebraska has since decided that employees hired since 2003 will go into a cash balance DB plan.

West Virginia had a similar experience. While teachers hired between 1991 and 2005 had only a DC plan, after July 1, 2005, all newly hired teachers went back into the old DB plan. One of the reasons for this change is that average DC returns lagged DB returns. Between 2001 and 2010, the average DB return was 1.6% higher than the average DC return. For more details, see the Technical Appendix.

DC MEMBERS CAN POOL INVESTMENT EXPERTISE WITH THE DB PLAN, ACHIEVE HIGHER RETURNS

In response to the lower returns generally earned in DC plans, some states offer employees with DC accounts the option of investing in the same manner as the DB pension system—and thereby earning exactly the same returns as the DB plan. For example, members of Washington State Plan 3 have the option to invest in the Total Allocation Portfolio (TAP), which mirrors the investments in the state DB plan and therefore earns the same returns. Washington has made the TAP the default investment option for Plan 3, and approximately 56% of members' DC assets are invested in the TAP option.

All employee contributions of members in the Oregon Public Service Retirement Plan are invested in the state's Individual Account Program (IAP). Like Washington's TAP, Oregon's IAP money is invested in the same manner as the DB plan. However, unlike Washington's TAP, which is one of many investment choices, Oregon's IAP offers no other investment choices.

Both Washington and Oregon provide members with a professionally managed portfolio. Washington's approach leaves room for individual risk tolerance, for instance, members near retirement may prefer to invest more conservatively. Oregon's approach ensures that all member funds are invested in a carefully managed portfolio. In both states, by foregoing the ability to choose their own investments, members are able to earn returns competitive with the DB plan.

It is also worth noting that both the Washington and Oregon plans are hybrid plans, in which employer contributions fund a DB plan, and employee contributions fund an account. This is significant because the DB plan provides some level of guaranteed income regardless of the account's investment returns.

WITH EXTRA CONTRIBUTIONS, DC PLANS CAN PROVIDE DEATH AND DISABILITY BENEFITS

Meaningful death and disability benefits can be provided in a DC environment, but it will require extra contributions that are not deposited to the members' DC accounts. Consider the choices three states have made to respond to the criticism that DC accounts do not provide adequate spousal and disability benefits.

In Florida, where members choose between a DB and a DC plan, disabled members can choose to surrender their DC account balance and receive the same disability benefits as provided by the DB plan. To finance this benefit, the employer pays a separate charge ranging from 0.25% of pay for general members to 1.33% of pay for special risk members, and a side account is maintained to finance the difference between the cost of the disability benefits and the dollar amount of the DC accounts surrendered by the members. (On the other hand, if DC members die in Florida, their death benefit is the DC account balance.) Montana PERA has a similar provision, where 0.30% of DC member pay is set aside to finance long-term disability benefits.

Alaska has a different approach. Alaska public employees hired after July 1, 2006, are only offered a DC plan. Here the occupational death and disability benefit is 40% of salary until normal retirement (50% of salary for the occupational death of police and fire members). The employer continues both the employer and employee contributions into a special occupational death and disability trust account until the member reaches normal retirement, or until the date the member would have reached normal retirement in the case of occupational deaths. At normal retirement age, the 40% (or 50%) of salary benefit stops, and the member, or survivor, receives the DC account as well as the accumulated contributions from the occupational death and disability trust account with actual returns net of expenses. Employers make contributions into a separate fund to finance the extra benefit not provided by the DC account.

MOVING FROM DB TO DC CAN INCREASE COSTS

Several states around the country have looked at eliminating the DB plan altogether, and moving all new hires into DC accounts. DB funding problems are often one of the reasons behind these efforts. Yet freezing the DB plan and moving to a DC plan that provides a similar level of retirement income can increase costs to the employer/taxpayer at exactly the wrong time. This occurs for three distinct reasons.

First and most important, DC plans do not have the economic efficiencies of DB plans. This drives up retirement costs. DB plans save money by pooling risks and achieving greater investment returns. According to one estimate, a DB plan can provide the same retirement income at about half the cost of a DC plan.[18] Thus, when a DB plan is frozen and replaced with a DC plan, far greater contributions from both employers/taxpayers and employees will be required to maintain the same level of benefit in the DC plan.

Second, maintaining two plans is more costly than operating just one. State and local governments typically do not have the option of transferring current employees out of a DB plan and into a new DC plan.[19] This means the employer will have to bear administrative costs for two plans, at least until the DB plan is finally phased out completely, a process that could take many decades as employees in the system complete their careers, retire, and ultimately die.

Finally, when a DB plan is closed, payments to amortize the unfunded liability for the DB plan may be accelerated which increases short term contributions and lowers long term contributions. This is actuarially consistent with the DB plan's shorter future lifetime. The current GASB rules (Statements 25 and 27) actually require this acceleration of unfunded liability payments when a DB plan is closed to be recognized on financial statements; not all plans determine their actual contributions according to the GASB rules.

These factors have influenced many states studying whether to switch from DB to DC. As a result, the vast majority have chosen to keep their DB plan, in the best interests of employers, taxpayers, and employees.

MOVING TO DC DOES NOT SOLVE FUNDING PROBLEMS, AS SEEN IN WEST VIRGINIA

Regardless of potential cost increases, changing from DB to DC does not solve the underlying funding problem a state may be experiencing. One interesting case study is the West Virginia Teachers Retirement System (TRS). In 1991, West Virginia closed TRS to new members, and all new hires were put into a DC plan. The state later found, however, that this "funding solution" had overlooked some important considerations.

Specifically:

- New members do not start with any unfunded obligation.
- Projected DC contributions for new members were worth more than the projected DB costs for those members.
- No unfunded obligations for existing members are reduced when new members go into a DC plan.

As a result, the loss of new members made it more difficult to finance the unfunded obligations of the DB plan.

By 2003, the state began reexamining this switch. The 4,500 members who were transferred from the DB to the DC plan in 1991 found it hard to retire after the bear market of 2000–2002. Additionally, as mentioned previously, DC member accounts had achieved much lower investment returns than TRS. After studying the issue extensively, the state decided that starting in 2005 all new hires would go into the DB plan. It was also found that providing equivalent benefits would be less expensive under the DB structure than in the DC plan. The state has shown discipline to achieve a better funded position, with extra contributions of $290.1 million in fiscal year 2006 and $313.8 million in fiscal year 2007. In addition, West Virginia completed a tobacco bond securitization in fiscal year 2007 and deposited $807.5 million of those proceeds into TRS as another special appropriation. Most recently, in June of 2008, the teachers in the DC plan were given the choice to switch to the DB plan, and a full 78% chose to switch, including 76% of young teachers (under 40 years old).[20]

West Virginia projected a $1.2 billion savings in the first 30 years by moving new entrants from the DC to the DB plan. This relies on an assumed return of 7.5%. When the Legislature asked the impact of lower returns, calculations showed an investment return of 6.0% or more was needed for the DB plan to save money.[21]

One way to finance preexisting unfunded liabilities and to defray employer expenses is to require specific contributions to the DB plan as a percent of DC member pay. Colorado, Florida, Montana PERA, Ohio PERS, Ohio Teachers, and South Carolina all require contributions paid as a percentage of DC member salaries that are not credited to DC member accounts. See the Technical Appendix for details.

EMPLOYERS DO NOT ALWAYS TAKE THE DB RISK: UTAH GIVES EMPLOYEES A NEW CHOICE

Traditionally, employers take most of the risks in DB plans and employees take most of the risks in DC plans. For example, in traditional DB plans, employers take on all of the funding risk; that is, if an unfunded liability in the pension plan develops, the employer is solely responsible for filling that funding gap. Of course, employees may indirectly take on some of that risk, for example, through increased employee contributions or decreased benefits. But the legal and fiduciary responsibility to pay down the unfunded liabilities remains with the employer. Under DB plans, employers are largely responsible for investment risk, inflation risk, and longevity risk. Under DC plans, on the other hand, the funding risk, investment risk, inflation risk, and longevity risk is solely assumed by employees. See Table 4.

The new retirement system in Utah challenges this tradition of employers bearing the entire DB risk. Starting July 1, 2011, Utah allows new hires to choose between a DC plan and a hybrid plan that includes both a DB and a DC account. Employees who choose the hybrid plan assume DB funding and investment risk. That is, employers will contribute 10% of salary to the hybrid plan regardless of future experience. If this contribution is insufficient to fund the DB plan, employees will have to make up the difference through an automatic payroll deduction. However, employer contributions not needed to fund the DB plan will be deposited into employees' DC accounts. Since 7.5% of pay is estimated to provide for the DB benefits, employees would get 2.5% of pay deposited to their DC accounts if all future experience matched the assumptions. Employees can also voluntarily contribute more to their DC accounts under the hybrid plan. If employees choose the DC plan instead of the hybrid, employers will contribute 10% of salary to the employees' DC account.[22] See Table 4.

Employees in Utah, then, must make a unique decision: in order to get the advantages of a DB plan, including a guaranteed benefit for life, professional investment management, and the benefits provided by longevity pooling, they must also take on the funding and investment risks. Employees are not *forced* to take on the DB risk, however; it is a choice, and they can opt for the DC plan instead—which, of course, comes with its own set of risks. If the employee chooses the DC plan, the employer will contribute 10% of pay to the DC account. If the employee chooses the hybrid plan, the employer will contribute 10% of pay as described above. Thus, under either plan, the employer contribution is a flat 10% of pay. The employer is neutral to the employee's decision. See Table 5.

Interestingly, the changes in Utah were intended to avoid future funding problems rather than solving any immediate funding issues. Although Utah had a funded ratio close to 100% before the market crisis, the stock market decline of 2008-2009 did impact its funding status. Therefore the State

Table 4. **Risks in Traditional DB and DC Plans, and Utah's New Hybrid Plan**

	Typical DB Plan (Traditional Pension)	Typical DC Plan (401(k), 403(b), 457)	Utah's New Hybrid Plan
Funding Risk	Employer assumes most of the funding risk. Although the employer is responsible for fully funding the plan, employees can share this risk through increased employee contributions or reduced benefits, should an unfunded liability develop.	Employees assume all funding risk.	Employees assume all funding risk above the 10% employer contribution.
Investment Risk	Employer assumes most of the investment risk. The employer is responsible for making all investment decisions, however, should unfunded liabilities develop as a result of low investment returns, employees can share this risk through increased employee contributions or reduced benefits.	Employees assume all investment risk.	Employers assume all investment decisions, but employees assume investment risk in terms of any unfunded liabilities that may develop.
Inflation Risk	If the plan offers a cost of living adjustment (COLA), depending on the COLAs structure, employers may assume all inflation risk, or may share the inflation risk with employees. If the plan offers no COLA, employees assume all inflation risk.	Employees assume all inflation risk.	The plan offers an automatic CPI COLA, but it is capped at 2.5%.
Longevity Risk	Employers assume all longevity risk.	Employees assume all longevity risk.	Employees assume DB risk in terms of any unfunded liabilities that may develop as a result of members living longer than assumed.
Portability/ Leakage Risk	Employees bear portability risk, in that they are likely to receive lower benefits should they terminate before retirement. Career employees bear no leakage risk, as withdrawals cannot be taken prior to retirement. Employees who terminate before retirement may withdraw their contributions and forfeit their benefit.	Employees bear no portability risk, as assets accumulated in the account can be taken without penalty when terminating employment. Employees bear leakage risk, in that accounts are not always rolled over when changing jobs, and loans and pre-retirement withdrawals are often allowed, which can reduce account balances available at retirement.	As this plan combines a base DB benefit with a DC account, portability and leakage risks are proportionate as described in the first two columns.

Legislature commissioned a study to project the system's funding and to gauge the impact of putting new hires in a less expensive plan. The study projected that if no changes were made and the system earned 7.75% returns in 2009 and each year thereafter, the employer contribution rate would increase from 13.25% to 23.10% of pay, and the funded ratio would decrease to 70.5% before starting to improve.

The old DB plan had a normal cost rate of 11.71% of pay, meaning contributions equal to 11.71% of pay for future hires were projected to finance their retirement benefits, but this contribution amount would not finance the large unfunded liabilities created by the asset losses of 2008-2009. In addition, the old plan included an employer DC contribution of 1.5% of pay. In other words, the entire employer contribution toward accrued retirement benefits for future hires was projected to be 13.21% of pay.

Since the plan design finally adopted for new hires has a cost of 10.00% of pay, it is projected to have cost savings that slowly build to 3.21% of pay as new employees are hired (3.21% = 13.21% – 10.00%).

What differentiates the change in Utah is not cost savings, however; it is risk shifting. If another market downturn occurs, the employers' contributions for new hires will remain 10% of pay; the employees in the hybrid plan will absorb the risk through a combination of smaller deposits to their DC accounts, as well as possible payroll deductions.

The normal cost rate for the DB portion of the new hybrid plan is 7.5% of pay. Thus, if all assumptions come true in the future, 2.5% of pay will be available to deposit to the DC portion of the hybrid plan. Table 5 summarizes the differences between the old and new plan designs.

Table 5. **The Utah Retirement System**

	All Employees Hired Before July 1, 2011	Employees Hired after July 1, 2011: Hybrid and DC Options	
	Tier 1 DB	Tier 2 Hybrid Plan	Tier 2 DC Plan
Employer Contribution	Employer pays total cost with no cap	Always 10% of pay	Always 10% of pay
Employee Contribution	0% of pay into DB plan	Automatic payroll deduction required if DB contributions are greater than 10%	Employees may contribute, but contributions are not mandatory
DB Normal Cost Rate	11.71% of pay	7.50% of pay	N/A
DC Account Contribution	1.5% of pay	10% of pay less required DB contribution	10% of pay
Final Average Salary Period	3 years	5 years	N/A
Percent of Final Average Salary Replaced per Year of Service	2.0% multiplier	1.5% multiplier	N/A
Unreduced Benefit	Age 65, or 30 years of service, age 62 at 10 years of service with actuarial reductions, or age 60 at 20 years of service with actuarial reductions	Age 65 or 35 years of service	N/A
Cost of Living Adjustment	CPI up to 4%	CPI up to 2.5%	N/A
Vesting Period	4 years of service	4 years of service	4 years of service

What About Do-Overs?

One plan design choice employers face is whether to give employees a chance to change their mind, and switch to the alternative retirement system. Having a do-over option may be particularly valuable to employees whose situations change unexpectedly. For example, a teacher who is married to a member of the military and expects to move frequently may initially choose the DC plan, as the portability aspect may be most attractive. However, if the couple's plans change and they decide to settle more permanently, the teacher may then wish to switch over into the DB plan.

Montana PERA, North Dakota, Vermont, and Washington require new hires to make a one-time irrevocable decision, but several other systems do allow for a change. Colorado allows members to change their election one time in years two through five after they are hired. Ohio Teachers allows members in the DC or combined plan to change in their fifth year of membership, and South Carolina allows members to change their election once in the first five years, but the change can only be from the DC plan to the DB plan. Florida allows members to change once at any time before retirement or termination of employment. Ohio PERS allows members to change up to three times: once in their first five years of employment, once in their second five years, and one more at any time after 10 years of service through retirement.

Different systems handle employees' switches in different ways. Florida allows two choices when members switch from DB to DC. The members can either (1) freeze their current DB benefits based on service and salary to date and have future contributions accumulate in their DC accounts, or (2) convert their DB benefits into DC accounts based on the present value of the normal retirement benefit. If a Florida member wants to switch from DC to DB, the member must pay the full cost based on either the present value or the actuarial accrued value, depending upon whether the member has previous DB service prior to joining the DC plan. The DC account is used first. If there is more money than needed in the DC account, the member keeps the excess assets in the DC account. If there is not enough money in the DC account, then the member must pay the difference or stay in the DC plan.

In Florida, only 53,112 employees have chosen to take up the do-over option since its inception in 2002. With nearly 700,000 active members when the option was implemented, and between 45,000 and 98,000 new hires each year for the past ten years who could take advantage of the option, this represents a small take up rate. See the Technical Appendix for more information.

Ohio PERS, which allows up to three changes, takes a somewhat different approach. Changes are prospective only, but members transferring to the DB or combined plan have the option to purchase service in the new plan using their DC or combined plan assets. Frozen DB benefits are based on salary and service during DB membership only.

In Ohio, out of a total of nearly 400,000 eligible members, only 866 members have opted for a do-over since 2003. Thus, with an average of about 2 in 1,000 eligible employees choosing to change their retirement plan, it is clear that Ohio's do-over option is not very popular. This suggests that the vast majority of public employees, at least within Ohio, are satisfied with their initial decision. See the Technical Appendix for more information.

IMPLICATIONS

When given the choice between a primary DB or DC plan, public employees overwhelmingly choose the DB plan. This suggests that DB plans are more attractive than DC plans to public employees. This is not surprising, as research has shown that public employees tend to favor DB plans in general.[23]

In the final analysis, it's a question of accumulation and distribution. The accumulation of contributions and investment earnings determines available retirement income. A plan that maximizes investment earnings and pools longevity risk over many employees maximizes the benefits provided by contributions. Public employees seem to favor plans that provide lifetime income.

There is not yet much experience on how many public employees with DC plans have been able to make their assets last a lifetime, although the experience in West Virginia suggests that this could be quite challenging for some workers. Unfortunately, the consequences of outliving one's assets are severe. DC plans rarely measure whether assets accumulated will provide adequate retirement income. It remains an open question to understand how public (and private) sector employees with DC plans can be sufficiently educated and empowered to navigate the risks of pre-retirement accumulation, as well as post-retirement distribution.

Although employers have traditionally taken on most of the risk in DB plans and employees have taken on most of the risks in DC plans, the experience of some states suggests that risks can be more shared between employers and employees. Examples include the combined DB/DC plans in Washington, Oregon, and Ohio, as well as certain DB plans in which any increases in contribution rates are shared by employees. The new hybrid plan in Utah shifts the entire DB funding risk from the employer to the employees.

CONCLUSION

State and local DB pension plans provide a critical source of reliable income for more than 19 million Americans, including 7.6 million retirees and 14.7 million active employees.[24] These plans are a cost effective way to provide broad-based coverage, secure money for retirement, a lifetime income, and economic protections for spouses for our nation's police officers, firefighters, schoolteachers, and other public servants.

A handful of states offer public employees a choice between primary DB and DC plans. This paper analyzes the choices made by employees in these states, and finds that:

- When given the choice between a primary DB or DC plan, public employees overwhelmingly choose the DB pension plan.
- DC plans are less cost efficient than DB plans, due to lower investment returns, and the lack of longevity risk pooling.
- DC plans lack supplemental benefits such as death and disability protection. Some plans have attempted to address these discrepancies, but these provisions require extra contributions that are not deposited to the members' accounts.
- Making a complete shift from a DB to a DC structure does nothing to close any funding shortfalls, and can actually increase costs. The experience in West Virginia finds that employees with an initial DC benefit overwhelmingly chose the DB plan when offered.
- The hybrid plan for new employees in Utah provides a unique case study, in that it has capped the DB funding risk to the employer, and shifted the rest to employees.

The experience in the public sector thus far indicates that public employees value their DB pension benefits quite highly. This fact, coupled with the fact that DB pensions remain the most cost-effective way to fund a retirement benefit, suggests that the public sector is unlikely to mimic the trend away from DB pensions witnessed in the private sector.

A1. State Systems Referenced

System	Current plan	Effective date
Alaska PERS & TRS	DC	July 1, 2006
Colorado PERA	DB/DC choice	January 1, 2006
Florida RS	DB/DC choice	July 1, 2002
Montana PERA	DB/DC choice	July 1, 2002
Nebraska PERS	Cash Balance DB plan	January 1, 2003
North Dakota PERS	DB/DC choice (limited group)	January 1, 2000
Ohio PERS	DB/DC/combined choice	January 1, 2003
Ohio STRS	DB/DC/combined choice	July 1, 2001
Oregon PERS	DB combined w/ DC-like account	August 29, 2003
South Carolina RS	DB/DC choice	July 1, 2001
Utah	Hybrid/DC choice	July 1, 2011
Vermont SRS	DB/DC choice (limited group)	January 1, 1999
Washington State	DB/combined choice	March 1, 2002
West Virginia TRS	DB	July 1, 2005

Systems with Supplemental Contributions

The following systems have contributions paid as a percentage of DC member salaries that are not credited to DC member accounts. Supplemental contributions required to fund DB liabilities show that introducing a DC plan does not reduce the unfunded liabilities of the existing DB plan.

Colorado PERA

- Amortization Equalization Disbursement (AED): The total AED percentage for 2011 is 2.6% of pay, and is scheduled to increase 0.4% each year to a maximum of 5% in 2017.
- Supplemental Amortization Equalization Disbursement (SAED): The total SAED percentage for 2011 is 2% of pay, and is scheduled to increase 0.5% each year to a maximum of 5% in 2017.

- In Colorado, the AED and SAED are both contributions to the DB plan to account for adverse selection. Both are applied to both DB and DC payroll. The AED is paid by employers. The SAED, although technically an employer contribution, is considered to be an employee contribution because it comes out of the foregone employee compensation package.

Florida RS

- To fund supplemental disability benefits for DC members, a contribution ranging from 0.25% of DC member pay for general members to 1.33% of DC member pay for special-risk members is paid by employers into a separate side account.
- Employers contribute 0.03% of pay to fund communication and administration.
- Beginning July 1, 2011, the Florida legislature required funding of a portion of the unfunded actuarial liability (UAL) for the Florida Retirement System Pension Plan. The Florida Retirement System has been doing this since the first of the alternative DC plans for selected State University System employees became effective July 1, 1984. The practice continued through the 1998 FRS valuation when the system was determined to be in surplus actuarial funding and all existing UAL bases were fully amortized. The Florida Retirement System Pension Plan was in actuarial surplus through the 2008 valuation. The Florida Legislature required some by class in the contributions for the 2011-2012 fiscal year. Employers are paying the UAL rate on all persons in a regularly established position, including the Investment Plan and the non-integrated DC plans created before the Investment Plan.

Montana PERA

The following contributions are made by Montana PERA employers as a percent of DC member pay:

- A Plan Choice Rate (PCR) contribution equal to 2.64% of pay is made to the DB plan to prevent DB costs from increasing due to financing unfunded liabilities over a smaller payroll and increases in the normal cost rate due to anti-selection. The PCR was 2.37% from inception at July 1, 2002, until July 1, 2007, and 2.505% of pay from July 1, 2007 until July 1, 2009. The PCR has been 2.64% of pay since July 1, 2009.
- A payment of 0.30% is made to finance long-term disability benefits.
- A payment of 0.04% is made to the education fund.

Ohio PERS

- A contribution of 0.77% of pay from employer contributions was made for all DC and combined plan members to the DB plan by the employer in 2011 as a "mitigation rate." The board reviews the mitigation rate annually, and it can vary between 0% and 6%. The highest level to date is 0.77%.

Ohio STRS

- 3.5% of pay from employer contributions for all DC members is used to pay for the unfunded liabilities of the DB plan.

South Carolina RS

- Of the total employer contribution made for the South Carolina Retirement System (SCRS), each employer contributes 5 percent directly to participant accounts and the remainder is remitted to the retirement system. SCRS may retain from this employer contribution an amount as determined by the director to defray any reasonable expenses incurred in performing services regarding the plan. Table A2 summarizes contribution levels.

A2. **South Carolina Employer Contributions**

Fiscal Year	% Allocated to Member	% Retained by SCRS	Total Employer Contribution
2006-2007	5.000%	3.050%	8.050%
2007-2008	5.000%	4.060%	9.060%
2008-2009	5.000%	4.240%	9.240%
2009-2010	5.000%	4.240%	9.240%
2010-2011	5.000%	4.240%	9.240%
2011-2012	5.000%	4.385%	9.385%
2012-2013	5.000%	4.530%	9.530%

Further System Details

The following section provides a brief summary of information relevant to this article for each system.

Alaska

Starting July 1, 2006, Alaska's public employee and teachers defined benefit plans are closed. New hires will go into the defined contribution plan.

The default percent of pay contribution rates are 5% employer and 8% employee in PERS and 7% employer and 8% employee in TRS.

Alaska teachers do not participate in Social Security and many Alaska public employers, like the state of Alaska, have opted out of Social Security participation.

Colorado Public Employees' Retirement Association (PERA)

Starting Jan. 1, 2006, Colorado allowed new state employees (people without a tie to the PERA DB plan within the last year) to choose between the PERA DB plan, the PERA DC plan, and the state-offered DC plan. In 2008, the Colorado General Assembly expanded choice to include the new employees within the Community College system. The Community College members have the choice between the PERA DB plan and the PERA DC Plan. The state-offered DC plan was not available to the Community College employees. In 2009, the Colorado General Assembly passed legislation that moved participants in the state-offered DC plan into the PERA DC plan. Choice for new hires of both the State of Colorado and the Community Colleges is now solely between the PERA DB plan and the PERA DC plan.

Members have a 60-day election window and can then change their minds once between the PERA DB and PERA

A3. **Colorado PERA New Hire Choices* (Effective January 1, 2006)**

	DB by default	DB active enrollments	DC active enrollments
2006	37%	48%	14%
2007	39%	43%	18%
2008	58%	29%	13%
2009	53%	33%	15%
2010	33%	55%	12%

**Based on 28,322 new hires.*

DC plans either way in years two through five. If a member changes to the DC plan, s/he must completely refund the DB account, and leave the DB plan for DC plan. DB service can't be frozen for an active member. If the member changes to the DB plan, the member has the option to purchase his or her original time in the DB plan after one year based on actuarial value.

The DB and DC plans require the same employer and employee percentage of pay contributions. The base contribution rates are 10.15% employer and 8% employee for state and school employees, and 12.85% employer and 10% employee for state troopers. For DB members, 1.02% of pay from the base employer contribution is used to fund retiree health care instead of pension benefits. For DC members, the 1.02% of pay goes into the members' DC accounts as part of the employer contribution and it is up to the members to pay for health care when they retire although they may participate in the association's health care program, PERACare. The AED and SAED supplemental contributions described earlier are in addition to these base contribution rates.

Table A3 is a historical record of the choices of new hires in Colorado PERA.

Florida Retirement System (FRS)

Starting July 1, 2002, Florida allowed new employees to choose between a DB plan and a DC plan.

There are no employee contributions to either the DB or the DC plan. Employer contributions to members' DC accounts range from 9% of pay for general members to 20% of pay for special risk. Employer contributions to fund additional disability benefits for DC members range from 0.25% of pay for general members to 1.33% of pay for special-risk members. Employers contribute 0.03% of pay to fund communication and administration.

DC accounts vest 100% at one year of service. DB benefits vest 100% at six years of service. Accounts and benefits are 0% vested before these dates.

A4. **Florida Retirement System New Hire Choices* (Effective July 1, 2002)**

	DB by default	DB active enrollments	DC active enrollments
9/02 – 6/03	86%	6%	8%
7/03 – 6/04	73%	11%	16%
7/04 – 6/05	61%	18%	21%
7/05 – 6/06	59%	19%	22%
7/06 – 6/07	58%	18%	24%
7/07 – 6/08	55%	19%	26%
7/08 – 6/09	55%	22%	23%
7/09 – 6/10	56%	21%	23%
7/10 – 6/11	53%	22%	25%

**At June 30, 2011 there are 552,984 DB members and 105,250 DC members.*

A5. **Take Up Rates of Florida's "Do-Over" Options, 2002-2011**

Do-Over Option	Total members who have made this change
Pension Plan to Investment Plan	51,055
Pension Plan to Hybrid Plan	138
Investment Plan to Pension Plan	1,919
Total	53,112

Table A4 is a historical record of the choices of new hires in Florida. Florida has an active education campaign. The overall DC election percentage of 25% in the year ending June 30, 2011, is the highest of any system in this study.

Members have a six-month election window and can change their minds once at any time before retirement or termination. Details of how the switch is treated are given in the main body of the article.

A6. **Montana PERA New Hire Choices (Effective July 1, 2002)**

	DC active enrollments
7/04 – 6/05	9%
7/05 – 6/06	10%
7/06 – 6/07	10%
7/07 – 6/08	10%
7/08 – 6/09	9%
7/09 – 7/10	9%
7/10 – 7/11	3%

Montana Public Employees' Retirement Administration (PERA)

Starting Jan. 1, 2002, Montana PERA allowed new employees to choose between a DB plan and a DC plan.

Members have 12 months after hire to make a one-time irrevocable decision between the DB plan and the DC plan.

The DB and DC plans require the same employer and employee percentage of pay contributions. Employers contribute 7.17% of pay. Employees contribute 6.90% of pay. Employer DC contributions can be broken down as 4.19% to the DC account, 2.64% plan choice rate (DB funding), 0.30% for long-term disability benefits, and 0.04% for the education fund. The entire employee contribution is credited to the DC account.

Table A6 is a historical record of the choices of new hires in Montana PERA. Members not making a choice are placed in the DB plan by default; however, statistics are not available on what portion of new hires entering the DB plan did so by default.

North Dakota Public Employees Retirement System (NDPERS)

Starting Jan. 1, 2000, North Dakota allowed nonclassified state employees to choose between a DB plan and a DC plan. As only nonclassified state employees are eligible, there were only 228 active members in the DC plan as of December 31, 2010.

Members have six months after hire to make a one-time irrevocable decision between the DB plan and the DC plan.

The DB and DC plans require the same employer and employee percentage of pay contributions. Employers contribute 4.12% of pay and employees contribute 4% of pay for a total contribution of 8.12% of pay.

Table A7. **North Dakota PERS New Hire Elections (January 2001–December 2010;* Effective January 1, 2000)**

	DB by default	DC active enrollments
1/2001 – 6/2008	88%	12%
2008	93%	7%
2009	88%	12%
2010*	98%	2%

** There are 228 active members in the DC plan as of 2010. Statistics are maintained by calendar year starting in 2008. One new employee out of the 63 eligible joined the DC plan in 2010.*

Table A7 shows that 12% or fewer of the new hires have actively elected the DC plan and 88% or more have either actively elected the DB plan or been placed in the DB plan as the default. Breakouts of the portion of DB elections that were active versus default are not available.

Ohio Public Employees Retirement System (OPERS)

Starting Jan. 1, 2003, OPERS allowed new employees to choose between an all-DB plan (the Traditional Pension Plan), an all-DC plan (the Member-Directed Plan), and the Combined Plan. In the Combined Plan, employer contributions fund DB benefits and all member contributions are credited to DC accounts.

The employer contribution is 14% of pay and the employee contribution is 10% of pay for all three plans and for all groups. Members in the all-DC and combined plans have all employee contributions credited to their DC accounts. However, a portion of the employer contribution is used to fund retiree health care (4.5% of pay in 2010; for DC participants, this contribution is deposited into a VEBA). Also, the mitigation rate, which is currently 0.77% of pay, comes out of the 14% employer contribution and is not credited to DC accounts.

Table A8 is a historical record of the choices of new hires in OPERS.

Members have a 180-day selection window. Members have three chances to change their minds about their choice—once in the first five years of total service credit, once between five to ten years, and once at any time after ten years. Changes are prospective only, but members transferring to the all-DB or combined plan have the option to purchase service in the new plan using their DC accounts. Service purchases are based on service in the plan the member is opting out of; must use the DC account first; and if the DC account is less than the total cost, then the member may still purchase all service with an additional lump sum, rollover, or payroll deduction. Frozen DB benefits are based on salary and service during DB membership only.

Table A8. **Ohio PERS New Hire Choices* (Effective January 1, 2003)**

	DB by default	DB active enrollments	DC active enrollments	Combined plan active enrollments
2004	84%	11%	3%	2%
2005	84%	10%	3%	3%
2006	83%	12%	3%	2%
2007	82%	13%	3%	2%
2008	81%	14%	3%	2%
2009	84%	12%	3%	1%
2010	78%	17%	4%	1%

** Based on 349,490 new hires.*

Table A9. **Take Up Rates of Ohio PERS "Do-Over" Options, 2003-2011**

Do-Over Option	Total members who have made this change
DB Plan to DC Plan	419
DB Plan to Combined Plan	114
Combined Plan to DC Plan	17
Combined Plan to DB Plan	120
DC Plan to Combined Plan	30
DC Plan to DB Plan	166
Total	**866**

A10. **Ohio Teachers New Hire Choices* (Effective July 1, 2001)**

	DB by default	DB active enrollments	DC active enrollments	Combined plan active enrollments
7/01 – 6/04	69%	15%	10%	6%
7/04 – 6/05	70%	15%	11%	4%
7/05 – 6/06	72%	13%	11%	4%
7/06 – 6/07	72%	13%	11%	4%
7/07 – 6/08	71%	14%	11%	4%
7/08 – 6/09	71%	15%	10%	4%
7/09 – 6/10	81%	10%	7%	2%
7/10 – 6/11	79%	10%	9%	2%

** Based on 171,568 new hires through June 30, 2011.*

State Teachers Retirement System of Ohio (STRS)

Starting July 1, 2001, STRS allowed new employees to choose between an all-DB plan, an all-DC plan, and a combined plan. In the combined plan, employer contributions fund DB benefits and all member contributions are credited to DC accounts.

Members have a six-month election window. After the member is put in the all-DB plan either by default or by active election, he or she cannot elect out. Members who choose the DC or combined plan have a one-time option at the end of the fiscal year following the fourth anniversary of the hire date to switch to one of the other two plans that were not chosen at the time membership began. Members must positively elect to stay in the combined or all-DC plan during this reselection period or they will default into the all-DB plan. If members change into the all-DB plan, they forfeit their DC accounts and are treated as if they had been in the all-DB plan since hire. There are no changes after the end of the fifth fiscal year of participation after hire.

The employer contribution is 14% of pay and the employee contribution is 10% of pay for all three plans. Members in the all-DC and combined plans have all employee contributions credited to their DC accounts. However, a portion of the employer contribution to the all-DC plan is used to fund unfunded liabilities for the all-DB plan (3.5% of pay in 2008).

Table A10 is a historical record of the choices of new hires in STRS of Ohio.

Oregon Public Service Retirement Plan (OPSRP)

Oregon has chosen that starting Aug. 29, 2003, all new hires go into a combined pension plan with two components: the defined benefit pension program and the defined contribution-like Individual Account Program (IAP).

The pension program provides a defined benefit equal to 1.5% of final average salary (1.8% for police officers and firefighters) for every year of service and is funded entirely by employer contributions and investment earnings.

The IAP is funded by the employee contributions, which are 6% of pay. All IAP assets are invested in the same portfolio as the DB assets; there is no difference. Employees have no choice in how IAP assets are invested. As a result, the members' IAP accounts earn comparable returns, positive or negative, to the DB assets. Earnings are credited annually to member accounts. Administrative fees are deducted from the fund's earnings as part of the annual crediting process. Members receive an annual statement after earnings are credited each year.

South Carolina Retirement Systems

South Carolina allows new employees of State agencies, institutions of higher education, and employees of k-12 schools to choose between a DB plan and a DC plan. Employees of municipalities, counties or special purpose districts cannot participate in the DC plan. This arrangement was made effective over the period from July 1, 2001, to July 1, 2003, varying by group.

DC members choose between four authorized investment providers. Members must choose investment options from their chosen investment provider. Members may change investment providers during the annual open-enrollment period subject to the investment provider's contractual limitations.

A11. **South Carolina Retirement Systems Percent of New Hires Electing DC* (Effective July 2, 2001, and July 1, 2003)**

	Higher Education	K - 12 Schools	State Agencies	Overall
7/04 – 6/05	32%	14%	11%	17%
7/05 – 6/06	34%	14%	12%	18%
7/06 – 6/07	37%	15%	13%	19%
7/07 – 6/08	35%	16%	13%	20%
7/08 – 6/09	33%	14%	11%	18%
7/09 – 6/10	31%	12%	10%	17%
7/10 – 6/11	33%	11%	13%	18%

** Based on 201,466 new hires through June 30, 2011.*

Members have a 30-day election window after hire to choose between the DB plan and the DC plan. During their first five years, members can change from the DC plan to the DB plan. Members cannot change from the DB plan to the DC plan. If a member changes to the DB plan during this five-year period, the member has the option to purchase his or her original time in the DB plan. The cost is 16% of the member's highest career salary for each year of service. The member has the option, but is not required, to use his or her DC account for these service purchases.

The DB and DC plans require the same employer and employee percentage of pay contributions. Employers currently contribute 9.24% of pay. Employees contribute 6.50% of pay. Five percent of employer DC contributions are deposited to the DC account; the South Carolina Retirement System collects the difference between the employer contribution and the 5% allocated to member accounts and may retain an amount as determined by the director to defray any reasonable expenses incurred in performing services regarding the plan. The entire employee contribution is credited to the DC account. Participants are immediately vested.

Table A11 is a historical record of the choices of new hires in South Carolina. Like most other systems, the DB plan is the default election. It is interesting to note that the percent of new hires electing DC varies widely by group. The percent of higher education employees choosing DC has varied from 31% to 37%, whereas the DC choice for other groups has only varied from 10% to 16%.

Vermont

Starting Jan. 1, 1999, all new exempt state employees were given a choice between a DB plan and a DC plan. In addition, beginning in July of 2000, the governing body of employers in the Vermont Municipal Employees' Retirement System (VMERS) can elect to offer employees a choice between a DB plan and a DC plan. To date, about 92 of the over 400 VMERS employers have chosen to offer this choice to their employees.
Employees make a one-time irrevocable choice at hire.

In the state DC plan, employers contribute 7% of pay and employees contribute 2.85% of pay. In the VMERS DC plan, employers contribute 5% of pay and employees contribute 5% of pay.

Statistics on the percentage of members electing the DC plan or DB plan are not available.

Washington State Department of Retirement Systems

Starting March 1, 2002, Washington allowed new hires in the Public Employees' Retirement System (PERS) to choose between an all-DB plan (Plan 2), and a combined plan (Plan 3). In the combined plan, employer contributions fund DB benefits equal to 1% of final average earnings for each year of service and all member contributions are credited to DC accounts. Starting July 1, 2007, new hires in the Teachers' Retirement System (TRS) and the School Employees' Retirement System (SERS) were given the same choice between Plan 2 and Plan 3.

Members have 90 days after hire to make a one-time irrevocable decision between the all DB plan and the combined plan.

At the same time the plan election is made in the first 90 days, members in the combined plan (Plan 3) also choose between six employee contribution-rate options. Once the employee contribution-rate option is chosen, it cannot be changed as long as the member remains with the same employer. If members separate from the employer, they may change their contribution rate with the next employer. All employee contributions are credited to the DC account.

The six employee contribution options in the combined plan are as follows:

- Option A: 5% of pay contribution at all ages
- Option B: 5% to age 35, 6% at ages 35 to 44, 7.5% at ages 45 and up
- Option C: 6% to age 35, 7.5% at ages 35 to 44, 8.5% at ages 45 and up
- Option D: 7% of pay contribution at all ages
- Option E: 10% of pay contribution at all ages
- Option F: 15% of pay contribution at all ages

Employees who do not make an election in the first 90 days after hire are placed in the combined plan (Plan 3) with employee contribution option A. Approximately 65% of combined plan members are in option A, with the remainder spread fairly evenly between the other five contribution options.

One of the DC investment options is the Total Allocation Portfolio (TAP), which mirrors the investments in the state DB plan and therefore earns the same returns. Washington has made the TAP the default investment option for Plan 3 and approximately 56% of the members' DC assets are in the TAP option. Starting in October of 2008, target date funds managed by an outside provider have also been available. The target date funds allocate investments without the member's involvement and automatically change the asset mix as the member moves closer to retirement.

Table A12 shows that approximately 68% of the PERS members hired between March 1, 2002, and June 28, 2011, have actively chosen the all DB plan over the combined plan, which is the default. Breakouts of choices by year are not available.

A12. **Cumulative Washington PERS New Hire Elections, March 2002 – June 2011**

Plan 3 Combined DB & DC by default	Plan 3 Combined DB & DC active enrollments	Plan 2 All DB active enrollments
21%	11%	68%

West Virginia Teachers Retirement System

The following chronology of the West Virginia TRS fills in some holes not described in the article.

- 1941: West Virginia TRS was established as a DC plan.
- 1960s and 1970s: DB benefits were added to counter the inadequate DC benefits, but the benefits were never properly funded.
- 1991: The DC plan (TDC) was established for new hires in response to funding problems, and 4,500 former DB participants also switched from the DB to DC.
- 2003: Many of the 4,500 who switched felt misled and said they could not afford to retire. Other DC members were also not satisfied.
- 2005: The state decided that a given level of benefits could be funded for a lower cost through a DB plan. Average DC returns had been lower than DB returns in both up and down markets. Changing to a DC plan did not solve the state's funding problems. All members hired after July 1, 2005, go into the DB plan instead of the DC plan. West Virginia projected a $1.2 billion savings in the first 30 years due to moving new entrants from the DC to the DB plan.
- 2006 and 2007: Special appropriations of $290.1 million in FY2006 and $313.8 million in FY2007 were deposited into TRS. In addition, West Virginia completed a tobacco bond securitization in FY2007 and deposited $807.5 million of those proceeds into TRS as another special appropriation. All these amounts were in addition to the regular contribution determined under the ARC, which was converted to a level dollar amortization (from level percentage of payroll).
- 2008: DC members are given the option to switch to the DB plan. Of those DC members, 78.6% (14,925 members) chose to switch to the DB plan. Surprisingly, the switch, which was expected to cost the state up to $78 million before the elections were made, is now expected to save the state about $22 million. Fewer older TDC members than expected transferred. More young TDC members than expected transferred. 50% of those over 70 transferred; 69% of those age 65 to 69 transferred; 81% of those 45 to 64 transferred; and 76% of members under age 40 transferred.

Table A13 shows the investment returns for the 10 years ended June 30, 2001, through June 30, 2010. The ten-year average DB return was 1.6% higher than the average DC return.

Table A13. **West Virginia Teachers' DC Returns Compared to TRS Returns**

Year ending June 30	DC plan	DB plan
2001	-2.60%	-0.25%
2002	-3.76%	-2.94%
2003	4.84%	4.75%
2004	8.83%	15.08%
2005	6.33%	10.56%
2006	6.67%	9.55%
2007	11.85%	17.43%
2008	-3.28%	-7.64%
2009	-12.16%	-16.77%
2010	9.16%	15.20%
10 Yr Average	**2.32%**	**3.93%**

ENDNOTES

1 U.S. Census Bureau. 2009. *State and Local Government Employee-Retirement Systems.* Washington, DC: U.S. Census Bureau.

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MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **October 16, 2014**

SUBJ: **Legislative Update**

There have been two interim legislative meetings since the Board last met.

- **Legislative Employee Benefits Programs Committee (LEBPC)**

The LEBPC met on September 18, 2014. At the meeting, I presented the testimony on Bill No. 140 which includes IRC updates, and submitted the proposed amendment approved by the TFFR Board. A copy of the updated bill is attached (15.0140.02000). The amended bill has now been submitted to Segal for final review.

The Committee's next meeting is on October 29. At that meeting, the Committee will receive the final actuarial comments on Bill No. 140 from Segal. The Committee will also make its recommendation on the bill: favorable, unfavorable, or no recommendation.

Segal will also present the results of the 2014 valuation report and funding projections at the October 29 meeting.

- **Legislative Government Finance Committee (LGFC)**

The LGFC met on October 8, 2014. The Committee discussed and approved submitting various amended bills to the Legislative Management Committee for consideration by that Committee (bill drafts enclosed).

The Committee reviewed several amendments to Bill No. 176 (15.0176.03000) which would close the 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 (15.3010.03000) and Bill No. 189 (15.0189.02000) relate to establishing a new Public Employee Retirement Stabilization Fund and transferring certain funds from the Foundation Aid Stabilization Fund for the purpose of addressing existing and / or anticipated unfunded benefit obligations of state retirement funds, low interest school construction loans, or other education-related purposes. The Public Employee Retirement Stabilization Fund would be invested by the State Investment Board.

The LGFC is not expected to meet again during the interim.

Enclosures

Sixty-fourth
Legislative Assembly
of North Dakota

BILL NO.

Introduced by

(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.

15.0176.03000

Sixty-fourth
Legislative Assembly
of North Dakota

FIRST DRAFT:
Prepared by the Legislative Council staff for the
Government Finance Committee
October 2014

Introduced by

A BILL for an Act to create and enact section 54-52.6-02.1 of the North Dakota Century Code, relating to a defined contribution retirement plan for state employees; and to amend and reenact sections 54-52-01, 54-52-02.5, 54-52-02.9, 54-52.6-01, 54-52.6-02, 54-52.6-03, and 54-52.6-10 of the North Dakota Century Code, relating to a defined contribution retirement plan for state employees.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. AMENDMENT. Section 54-52-01 of the North Dakota Century Code is amended and reenacted as follows:

54-52-01. ~~(Effective through July 31, 2017)~~ Definition of terms.

As used in this chapter, unless the context otherwise requires:

1. "Account balance" means the total contributions made by the employee, vested employer contributions under section 54-52-11.1, the vested portion of the vesting fund as of June 30, 1977, and interest credited thereon at the rate established by the board.
2. "Beneficiary" means any person in receipt of a benefit provided by this plan or any person designated by a participating member to receive benefits.
3. "Correctional officer" means a participating member who is employed as a correctional officer by a political subdivision.
4. "Eligible employee" means all permanent employees who are first employed before January 1, 2016, and who meet all of the eligibility requirements set by this chapter and who are eighteen years or more of age, and includes appointive and elective officials under sections 54-52-02.5, 54-52-02.11, and 54-52-02.12 first employed before January 1, 2016, and nonteaching employees of the superintendent of public instruction, including the superintendent of public instruction, who ~~elect~~elected to

transfer from the teachers' fund for retirement to the public employees retirement system under section 54-52-02.13, and employees of the state board for career and technical education who ~~elect~~elected to transfer from the teachers' fund for retirement to the public employees retirement system under section 54-52-02.14. Eligible employee does not include state employees who ~~elect to become members of the retirement plan established under chapter 54-52.6~~are first employed after December 31, 2015, but does include supreme court judges and district court judges; employees eligible to participate in the national guard retirement plan or a law enforcement retirement plan; employees of a political subdivision; and employees of the board of higher education and state institutions under the jurisdiction of the board first employed before January 1, 2016, and who are not participating in the teachers' insurance and annuity association of America - college retirement equities fund retirement plan.

5. "Employee" means any person employed by a governmental unit, whose compensation is paid out of the governmental unit's funds, or funds controlled or administered by a governmental unit, or paid by the federal government through any of its executive or administrative officials; licensed employees of a school district means those employees eligible to participate in the teachers' fund for retirement who, except under subsection 2 of section 54-52-17.2, are not eligible employees under this chapter.

6. "Employer" means a governmental unit.

7. "Funding agent" or "agents" means an investment firm, trust bank, or other financial institution which the retirement board may select to hold and invest the employers' and members' contributions.

8. "Governmental unit" means the state of North Dakota, except the highway patrol for members of the retirement plan created under chapter 39-03.1, or a participating political subdivision thereof.

9. "National guard security officer or firefighter" means a participating member who is:
   a. A security police employee of the North Dakota national guard; or
   b. A firefighter employee of the North Dakota national guard.

10. "Participating member" means all eligible employees who through payment into the plan have established a claim against the plan.
11. "Peace officer" means a participating member who is a peace officer as defined in section 12-63-01 and is employed as a peace officer by the bureau of criminal investigation or by a political subdivision and, notwithstanding subsection 12, for persons employed after August 1, 2005, is employed thirty-two hours or more per week and at least twenty weeks each year of employment. Participating members of the law enforcement retirement plan created by this chapter who begin employment after August 1, 2005, are ineligible to participate concurrently in any other retirement plan administered by the public employees retirement system.
12. "Permanent employee" means a governmental unit employee whose services are not limited in duration and who is filling an approved and regularly funded position in an eligible governmental unit, and is employed twenty hours or more per week and at least twenty weeks each year of employment.
13. "Prior service" means service or employment prior to July 1, 1966.
14. "Prior service credit" means such credit toward a retirement benefit as the retirement board may determine under the provisions of this chapter.
15. "Public employees retirement system" means the retirement plan and program established by this chapter.
16. "Retirement" means the acceptance of a retirement allowance under this chapter upon either termination of employment or termination of participation in the retirement plan and meeting the normal retirement date.
17. "Retirement board" or "board" means the seven persons designated by this chapter as the governing authority for the retirement system created.
18. "Seasonal employee" means a participating member who does not work twelve months a year.
19. "Service" means employment on or after July 1, 1966.
20. "Service benefit" means the credit toward retirement benefits as determined by the retirement board under the provisions of this chapter.
21. "Temporary employee" means a governmental unit employee who is not eligible to participate as a permanent employee, who is at least eighteen years old and not

actively contributing to another employer-sponsored pension fund, and, if employed by a school district, occupies a noncertified teacher's position.

22. "Wages" and "salaries" means the member's earnings in eligible employment under this chapter 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, 401(k), 403(b), 414(h), or 457. "Salary" does not include fringe benefits such as payments for unused sick leave, personal leave, vacation leave paid in a lump sum, overtime, housing allowances, transportation expenses, early retirement incentive pay, severance pay, medical insurance, workforce safety and insurance benefits, disability insurance premiums or benefits, or salary received by a member in lieu of previously employer-provided fringe benefits under an agreement between the member and participating employer. Bonuses may be considered as salary under this section if reported and annualized pursuant to rules adopted by the board.

~~**(Effective after July 31, 2017) Definition of terms.** As used in this chapter, unless the context otherwise requires:~~

~~1. "Account balance" means the total contributions made by the employee, vested employer contributions under section 54-52-11.1, the vested portion of the vesting fund as of June 30, 1977, and interest credited thereon at the rate established by the board.~~

~~2. "Beneficiary" means any person in receipt of a benefit provided by this plan or any person designated by a participating member to receive benefits.~~

~~3. "Correctional officer" means a participating member who is employed as a correctional officer by a political subdivision.~~

~~4. "Eligible employee" means all permanent employees who meet all of the eligibility requirements set by this chapter and who are eighteen years or more of age, and includes appointive and elective officials under sections 54-52-02.5, 54-52-02.11, and 54-52-02.12, and nonteaching employees of the superintendent of public instruction, including the superintendent of public instruction, who elect to transfer from the teachers' fund for retirement to the public employees retirement system under section 54-52-02.13, and employees of the state board for career and technical education who elect to transfer from the teachers' fund for retirement to the public employees~~

~~retirement system under section 54-52-02.14. Eligible employee does not include nonclassified state employees who elect to become members of the retirement plan established under chapter 54-52.6 but does include employees of the judicial branch and employees of the board of higher education and state institutions under the jurisdiction of the board.~~

~~5. "Employee" means any person employed by a governmental unit, whose compensation is paid out of the governmental unit's funds, or funds controlled or administered by a governmental unit, or paid by the federal government through any of its executive or administrative officials; licensed employees of a school district means those employees eligible to participate in the teachers' fund for retirement who, except under subsection 2 of section 54-52-17.2, are not eligible employees under this chapter.~~

~~6. "Employer" means a governmental unit.~~

~~7. "Funding agent" or "agents" means an investment firm, trust bank, or other financial institution which the retirement board may select to hold and invest the employers' and members' contributions.~~

~~8. "Governmental unit" means the state of North Dakota, except the highway patrol for members of the retirement plan created under chapter 39-03.1, or a participating political subdivision thereof.~~

~~9. "National guard security officer or firefighter" means a participating member who is:~~

~~a. A security police employee of the North Dakota national guard; or~~

~~b. A firefighter employee of the North Dakota national guard.~~

~~10. "Participating member" means all eligible employees who through payment into the plan have established a claim against the plan.~~

~~11. "Peace officer" means a participating member who is a peace officer as defined in section 12-63-01 and is employed as a peace officer by the bureau of criminal investigation or by a political subdivision and, notwithstanding subsection 12, for persons employed after August 1, 2005, is employed thirty-two hours or more per week and at least twenty weeks each year of employment. Participating members of the law enforcement retirement plan created by this chapter who begin employment~~

~~after August 1, 2005, are ineligible to participate concurrently in any other retirement plan administered by the public employees retirement system.~~

~~12. "Permanent employee" means a governmental unit employee whose services are not limited in duration and who is filling an approved and regularly funded position in an eligible governmental unit, and is employed twenty hours or more per week and at least twenty weeks each year of employment.~~

~~13. "Prior service" means service or employment prior to July 1, 1966.~~

~~14. "Prior service credit" means such credit toward a retirement benefit as the retirement board may determine under the provisions of this chapter.~~

~~15. "Public employees retirement system" means the retirement plan and program established by this chapter.~~

~~16. "Retirement" means the acceptance of a retirement allowance under this chapter upon either termination of employment or termination of participation in the retirement plan and meeting the normal retirement date.~~

~~17. "Retirement board" or "board" means the seven persons designated by this chapter as the governing authority for the retirement system created.~~

~~18. "Seasonal employee" means a participating member who does not work twelve months a year.~~

~~19. "Service" means employment on or after July 1, 1966.~~

~~20. "Service benefit" means the credit toward retirement benefits as determined by the retirement board under the provisions of this chapter.~~

~~21. "Temporary employee" means a governmental unit employee who is not eligible to participate as a permanent employee, who is at least eighteen years old and not actively contributing to another employer-sponsored pension fund, and, if employed by a school district, occupies a noncertified teacher's position.~~

~~22. "Wages" and "salaries" means the member's earnings in eligible employment under this chapter 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, 401(k), 403(b), 414(h), or 457. "Salary" does not include fringe benefits such as payments for unused sick leave, personal leave, vacation leave paid in a lump sum, overtime, housing allowances, transportation expenses, early retirement incentive pay,~~

~~severance pay, medical insurance, workforce safety and insurance benefits, disability insurance premiums or benefits, or salary received by a member in lieu of previously employer-provided fringe benefits under an agreement between the member and participating employer. Bonuses may be considered as salary under this section if reported and annualized pursuant to rules adopted by the board.~~

SECTION 2. AMENDMENT. Section 54-52-02.5 of the North Dakota Century Code is amended and reenacted as follows:

54-52-02.5. Newly elected and appointed state officials.

After December 31, 1999, ~~a person~~and before January 1, 2016, an individual elected or appointed to a state office for the first time must, from and after the date that ~~person~~individual qualifies and takes office, be a participating member of the public employees retirement system unless that ~~person~~individual makes an election at any time during the first six months after the date the ~~person~~individual takes office to participate in the retirement plan established under chapter 54-52.6. After December 31, 2015, an individual elected or appointed to a state office for the first time must, from and after the date the individual qualifies and takes office, be a participating member of the retirement plan established under chapter 54-52.6. As used in this section, the phrase "for the first time" means ~~a person~~an individual appointed, who, after December 31, 1999, does not hold office as an appointed official at the time of that ~~person's~~individual's appointment.

SECTION 3. AMENDMENT. Section 54-52-02.9 of the North Dakota Century Code is amended and reenacted as follows:

54-52-02.9. Participation by temporary employees.

~~A~~Before January 1, 2016, a temporary employee may elect, within one hundred eighty days of beginning employment, to participate in the public employees retirement system under this chapter and receive credit for service after enrollment. The temporary employee shall pay monthly to the fund an amount equal to ~~eight~~fourteen and twelve-hundredths percent times the temporary employee's present monthly salary. ~~The amount required to be paid by a temporary employee increases by two percent times the temporary employee's present monthly salary beginning with the monthly reporting period of January 2012, and with an additional two percent increase, beginning with the reporting period of January 2013, and with an additional increase of two percent, beginning with the monthly reporting period of January 2014.~~ The temporary employee shall also pay the required monthly contribution to the retiree health benefit fund established under section 54-52.1-03.2. This contribution must be recorded as a member contribution pursuant to section 54-52.1-03.2. An employer may not pay the temporary employee's contributions. A temporary employee who is first employed before January 1, 2016, may continue to participate as a temporary employee in the public employees retirement system until termination of employment or reclassification of the temporary employee as a permanent employee. A temporary employee may not purchase any additional credit, including additional credit under section 54-52-17.4 or past service under section 54-52-02.6.

SECTION 4. AMENDMENT. Section 54-52.6-01 of the North Dakota Century Code is amended and reenacted as follows:

54-52.6-01. (Effective through ~~July 31, 2017~~December 31, 2015) Definition of terms.

As used in this chapter, unless the context otherwise requires:

1. "Board" means the public employees retirement system board.
2. "Deferred member" means a person who elected to receive deferred vested retirement benefits under chapter 54-52.
3. "Eligible employee" means a permanent state employee who elects to participate in the retirement plan under this chapter.
4. "Employee" means any person employed by the state, whose compensation is paid out of state funds, or funds controlled or administered by the state or paid by the federal government through any of its executive or administrative officials.
5. "Employer" means the state of North Dakota.
6. "Participating member" means an eligible employee who elects to participate in the defined contribution retirement plan established under this chapter.
7. "Permanent employee" means a state employee whose services are not limited in duration and who is filling an approved and regularly funded position and is employed twenty hours or more per week and at least five months each year.
8. "Wages" and "salaries" means earnings in eligible employment under this chapter reported as salary on a federal income tax withholding statement plus any salary reduction or salary deferral amounts under 26 U.S.C. 125, 401(k), 403(b), 414(h), or 457. "Salary" does not include fringe benefits such as payments for unused sick leave, personal leave, vacation leave paid in a lump sum, overtime, housing allowances,

transportation expenses, early retirement, incentive pay, severance pay, medical insurance, workforce safety and insurance benefits, disability insurance premiums or benefits, or salary received by a member in lieu of previously employer-provided fringe benefits under an agreement between an employee and a participating employer. Bonuses may be considered as salary under this section if reported and annualized pursuant to rules adopted by the board.

(Effective after ~~July 31, 2017~~December 31, 2015) Definition of terms. As used in this chapter, unless the context otherwise requires:

1. "Board" means the public employees retirement system board.
2. "Deferred member" means a person who elected to receive deferred vested retirement benefits under chapter 54-52.
3. "Eligible employee" means a permanent state employee, ~~except an employee of the judicial branch or an employee of the board of higher education and state institutions under the jurisdiction of the board,~~ who is eighteen years or more of age ~~and who is in a position not classified by North Dakota human resource management services~~. If a participating member loses permanent employee status and becomes a temporary employee, the member may still participate in the defined contribution retirement plan. "Eligible employee" does not include a supreme court judge or a district court judge, an employee eligible to participate in the national guard retirement plan or a law enforcement retirement plan, an employee of a political subdivision, or an employee of the board of higher education and state institutions under the jurisdiction of the board who is participating in the teachers' insurance and annuity association of America - college retirement equities fund retirement plan.
4. "Employee" means any person employed by the state, whose compensation is paid out of state funds, or funds controlled or administered by the state or paid by the federal government through any of its executive or administrative officials.
5. "Employer" means the state of North Dakota.
6. "Participating member" means an eligible employee who ~~elects to participate~~participates in the defined contribution retirement plan established under this chapter.

7. "Permanent employee" means a state employee whose services are not limited in duration and who is filling an approved and regularly funded position and is employed twenty hours or more per week and at least five months each year.

8. "Temporary employee" means a governmental unit employee who is not eligible to participate as a permanent employee, who is at least eighteen years old and not actively contributing to another employer-sponsored pension fund, and, if employed by a school district, occupies a noncertified teacher's position.

~~8.~~9. "Wages" and "salaries" means earnings in eligible employment under this chapter reported as salary on a federal income tax withholding statement plus any salary reduction or salary deferral amounts under 26 U.S.C. 125, 401(k), 403(b), 414(h), or 457. "Salary" does not include fringe benefits such as payments for unused sick leave, personal leave, vacation leave paid in a lump sum, overtime, housing allowances, transportation expenses, early retirement, incentive pay, severance pay, medical insurance, workforce safety and insurance benefits, disability insurance premiums or benefits, or salary received by a member in lieu of previously employer-provided fringe benefits under an agreement between an employee and a participating employer. Bonuses may be considered as salary under this section if reported and annualized pursuant to rules adopted by the board.

SECTION 5. AMENDMENT. Section 54-52.6-02 of the North Dakota Century Code is amended and reenacted as follows:

54-52.6-02. (Effective through ~~July 31, 2017~~December 31, 2015) Election.

1. The board shall provide an opportunity for eligible employees who are new members of the public employees retirement system under chapter 54-52 to transfer to the defined contribution plan under this chapter pursuant to the rules and policies adopted by the board. An election made by a member of the public employees retirement system under chapter 54-52 to transfer to the defined contribution retirement plan under this chapter is irrevocable. For an individual who elects to transfer membership from the public employees retirement system under chapter 54-52 to the defined contribution retirement plan under this chapter, the board shall transfer a lump sum amount from the public employees retirement system fund to the participating member's account in the defined contribution retirement plan under this chapter.

However, if the individual terminates employment prior to receiving the lump sum transfer under this section, the election made is ineffective and the individual remains a member of the public employees retirement system under chapter 54-52 and retains all the rights and privileges under that chapter. This section does not affect an individual's right to health benefits or retiree health benefits under chapter 54-52.1.

2. If the board receives notification from the internal revenue service that this section or any portion of this section will cause the public employees retirement system or the retirement plan established under this chapter to be disqualified for tax purposes under the Internal Revenue Code, then the portion that will cause the disqualification does not apply.

3. A participating member who becomes a temporary employee may still participate in the defined contribution retirement plan upon filing an election with the board within one hundred eighty days of transferring to temporary employee status. The participating member may not become a member of the defined benefit plan as a temporary employee. The temporary employee electing to participate in the defined contribution retirement plan shall pay monthly to the fund an amount equal to ~~eight~~fourteen and twelve-hundredths percent times the temporary employee's present monthly salary. ~~The amount required to be paid by a temporary employee increases by two percent times the temporary employee's present monthly salary beginning with the monthly reporting period of January 2012, and with an additional increase of two percent, beginning with the monthly reporting period of January 2013, and with an additional increase of two percent, beginning with the monthly reporting period of January 2014.~~ The temporary employee shall also pay the required monthly contribution to the retiree health benefit fund established under section 54-52.1-03.2. This contribution must be recorded as a member contribution pursuant to section 54-52.1-03.2. An employer may not pay the temporary employee's contributions. A temporary employee may continue to participate as a temporary employee until termination of employment or reclassification of the temporary employee as a permanent employee.

4. A former participating member who has accepted a retirement distribution pursuant to section 54-52.6-13 and who subsequently becomes employed by an entity different

from the employer with which the member was employed at the time the member retired but which does participate in any state-sponsored retirement plan may, before reenrolling in the defined contribution retirement plan, elect to permanently waive future participation in the defined contribution retirement plan, whatever plan in which the new employing entity participates, and the retiree health program and maintain that member's retirement status. Neither the member nor the employer are required to make any future retirement contributions on behalf of that employee.

(Effective after ~~July 31, 2017~~December 31, 2015) Election.

1. The board shall provide an opportunity for each eligible employee who is a member of the public employees retirement system on ~~September 30, 2001, and who has not made a written election under this section~~June 30, 2016, to transfer to the defined contribution retirement plan ~~before October 1, 2001, to elect~~by electing in writing to terminate membership in the public employees retirement system and elect to become a participating member under this chapter. Except as provided in section 54-52.6-03, an election made by an eligible employee under this section is irrevocable. ~~The board shall accept written elections under this section from eligible employees during the period beginning on July 1, 1999, and ending 12:01 a.m. December 14, 2001. An eligible employee who does not make a written election or who does not file the election during the period specified in this section continues to be a member of the public employees retirement system.~~ An eligible employee who ~~makes and files a written election~~transfers to the defined contribution plan under this section ceases to be a member of the public employees retirement system ~~effective twelve midnight December 31, 2001;~~and becomes a participating member in the defined contribution retirement plan under this chapter ~~effective 12:01 a.m. January 1, 2002;~~ and waives all of that person's rights to a pension, annuity, retirement allowance, insurance benefit, or any other benefit under the public employees retirement system ~~effective December 31, 2001~~. This section does not affect a person's right to health benefits or retiree health benefits under chapter 54-52.1. An eligible employee who is first employed and entered upon the payroll of that person's employer ~~after September 30, 2001,~~ may make an election to participate in the defined contribution retirement plan established under this chapter at any time during the ~~first six months after the date of~~

~~employment. If the board, in its sole discretion, determines that the employee was not adequately notified of the employee's option to participate in the defined contribution retirement plan, the board may provide the employee a reasonable time within which to make that election, which may extend beyond the original six-month decision window~~period beginning July 1, 2016, and ending December 31, 2016.

2. If an individual who is a deferred member of the public employees retirement system on ~~September 30, 2001~~December 31, 2015, is reemployed and by virtue of that employment is again eligible for membership in the public employees retirement system under chapter 54-52, the individual may elect in writing to remain a member of the public employees retirement system or if eligible to participate in the defined contribution retirement plan established under this chapter to terminate membership in the public employees retirement system and become a participating member in the defined contribution retirement plan established under this chapter. An election made by a deferred member under this section is irrevocable. The board shall accept written elections under this section from a deferred member during the period beginning on the date of the individual's reemployment and ending upon the expiration of six months after the date of that reemployment. If the board, in its sole discretion, determines that the employee was not adequately notified of the employee's option to participate in the defined contribution retirement plan, the board may provide the employee a reasonable time within which to make that election, which may extend beyond the original six-month decision window. A deferred member who makes and files a written election to remain a member of the public employees retirement system retains all rights and is subject to all conditions as a member of that retirement system. A deferred member who does not make a written election or who does not file the election during the period specified in this section continues to be a member of the public employees retirement system. A deferred member who makes and files a written election to terminate membership in the public employees retirement system ceases to be a member of the public employees retirement system effective on the last day of the payroll period that includes the date of the election; becomes a participating member in the defined contribution retirement plan under this chapter effective the first day of the payroll immediately following the date of the election; and

waives all of that person's rights to a pension, an annuity, a retirement allowance, insurance benefit, or any other benefit under the public employees retirement system effective the last day of the payroll that includes the date of the election. This section does not affect any right to health benefits or retiree health benefits to which the deferred member may otherwise be entitled.

3. An eligible employee who elects to participate in the retirement plan established under this chapter must remain a participant even if that employee ~~returns to the classified service or~~ becomes employed by a political subdivision that participates in the public employees retirement system. The contribution amount must be as provided in this chapter, regardless of the position in which the employee is employed. Notwithstanding the irrevocability provisions of this chapter, if a member who elects to participate in the retirement plan established under this chapter becomes a supreme or district court judge, becomes a member of the highway patrol, becomes employed in a position subject to teachers' fund for retirement membership, or becomes an employee of the board of higher education or state institution under the jurisdiction of the board who is eligible to participate in an alternative retirement program established under subsection 6 of section 15-10-17, the member's status as a member of the defined contribution retirement plan is suspended, and the member becomes a new member of the retirement plan for which that member's new position is eligible. The member's account balance remains in the defined contribution retirement plan, but no new contributions may be made to that account. The member's service credit and salary history that were forfeited as a result of the member's transfer to the defined contribution retirement plan remain forfeited, and service credit accumulation in the new retirement plan begins from the first day of employment in the new position. If the member later returns to employment that is eligible for the defined contribution plan, the member's suspension must be terminated, the member again becomes a member of the defined contribution retirement plan, and the member's account resumes accepting contributions. At the member's option, and pursuant to rules adopted by the board, the member may transfer any available balance as determined by the provisions of the alternate retirement plan into the member's account under this chapter.

4. After consultation with its actuary, the board shall determine the method by which a participating member or deferred member may make a written election under this section. If the participating member or deferred member is married at the time of the election, the election is not effective unless the election is signed by the individual's spouse. However, the board may waive this requirement if the spouse's signature cannot be obtained because of extenuating circumstances.

5. If the board receives notification from the internal revenue service that this section or any portion of this section will cause the public employees retirement system or the retirement plan established under this chapter to be disqualified for tax purposes under the Internal Revenue Code, then the portion that will cause the disqualification does not apply.

6. A participating member who becomes a temporary employee may still participate in the defined contribution retirement plan upon filing an election with the board within one hundred eighty days of transferring to temporary employee status. The participating member may not become a member of the defined benefit plan as a temporary employee. The temporary employee electing to participate in the defined contribution retirement plan shall pay monthly to the fund an amount equal to ~~eight~~fourteen and twelve-hundredths percent times the temporary employee's present monthly salary. ~~The amount required to be paid by a temporary employee increases by two percent times the temporary employee's present monthly salary beginning with the monthly reporting period of January 2012, and with an additional increase of two percent, beginning with the monthly reporting period of January 2013, and with an additional increase of two percent, beginning with the monthly reporting period of January 2014.~~ The temporary employee shall also pay the required monthly contribution to the retiree health benefit fund established under section 54-52.1-03.2. This contribution must be recorded as a member contribution pursuant to section 54-52.1-03.2. An employer may not pay the temporary employee's contributions. A temporary employee may continue to participate as a temporary employee until termination of employment or reclassification of the temporary employee as a permanent employee.

7. A former participating member who has accepted a retirement distribution pursuant to section 54-52.6-13 and who subsequently becomes employed by an entity different from the employer with which the member was employed at the time the member retired but which does participate in any state-sponsored retirement plan may, before reenrolling in the defined contribution retirement plan, elect to permanently waive future participation in the defined contribution retirement plan, whatever plan in which the new employing entity participates, and the retiree health program and maintain that member's retirement status. Neither the member nor the employer are required to make any future retirement contributions on behalf of that employee.

SECTION 6. Section 54-52.6-02.1 of the North Dakota Century Code is created and enacted as follows:

54-52.6-02.1. (Effective January 1, 2016) Membership.

1. All eligible employees are participating members.
2. A temporary employee may elect, within one hundred eighty days of beginning employment, to participate in the defined contribution retirement plan under this chapter. The temporary employee electing to participate in the defined contribution retirement plan shall pay monthly to the fund an amount equal to fourteen and twelve-hundredths percent times the temporary employee's present monthly salary. The temporary employee shall also pay the required monthly contribution of the retiree health benefit fund established under section 54-52.1-03.2. This contribution must be recorded as a member contribution pursuant to section 54-52.1-03.2. An employer may not pay the temporary employee's contributions. A temporary employee may continue to participate as a temporary employee in the public employees retirement system until termination of employment.

SECTION 7. AMENDMENT. Section 54-52.6-03 of the North Dakota Century Code is amended and reenacted as follows:

54-52.6-03. (Suspended from October 1, 2013, through ~~July 31, 2017~~December 31, 2015) Transfer of accumulated fund balances.

For an individual who elects to terminate membership in the public employees retirement system under chapter 54-52, the board shall transfer a lump sum amount from the retirement fund to the participating member's account in the defined contribution retirement plan under this chapter. However, if the individual terminates employment prior to receiving the lump sum transfer under this section, the election made under section 54-52.6-02 is ineffective and the individual remains a member of the public employees retirement system under chapter 54-52 and retains all the rights and benefits provided under that chapter. The board shall calculate the amount to be transferred ~~for persons employed before October 1, 2001~~, using the two following formulas, and shall transfer the greater of the two amounts obtained:

1. The actuarial present value of the individual's accumulated benefit obligation under the public employees retirement system based on the assumption that the individual will retire under the earliest applicable normal retirement age, plus interest from January 1, 2001, to the date of transfer, at the rate of one-half of one percent less than the actuarial interest assumption at the time of the election; or
2. The actual employer contribution made, less vested employer contributions made pursuant to section 54-52-11.1, plus compound interest at the rate of one-half of one percent less than the actuarial interest assumption at the time of the election plus the employee account balance.

~~The board shall calculate the amount to be transferred for persons employed after September 30, 2001, using only the formula contained in subsection 2.~~

SECTION 8. AMENDMENT. Section 54-52.6-10 of the North Dakota Century Code is amended and reenacted as follows:

54-52.6-10. Vesting.

A participating member is immediately one hundred percent vested in that member's contributions made to that member's account under this chapter. A participating member ~~vests~~<u>is one hundred percent vested</u> in the employer contributions made on that member's behalf <u>upon</u>~~to an account under this chapter according to the following schedule:~~

~~1.~~ ~~Upon~~ completion of ~~two years~~<u>one year</u> of service~~, fifty percent.~~

~~2. Upon completion of three years of service, seventy-five percent.~~

~~3. Upon completion of four years of service, one hundred percent~~.

A participating member also becomes one hundred percent vested in the employer contributions upon reaching age sixty-five. A participating member who was a member or deferred member of the public employees retirement system under chapter 54-52 who makes an election to participate in the defined contribution retirement plan pursuant to this chapter must be credited with the years of service accrued under the public employees retirement system on the effective date of participation in the defined contribution retirement plan for the purpose of meeting vesting requirements for benefits under this section. Any forfeiture as a result of the failure of a participating member to vest in the employer contribution must be deposited in the administrative expenses account.

SECTION 9. PUBLIC EMPLOYEES RETIREMENT SYSTEM - ESTIMATE OF ACCUMULATED BALANCE TRANSFER. For the period beginning January 1, 2016, and ending June 30, 2017, upon the request of an individual who is eligible for termination of membership in the public employees retirement system under chapter 54-52 as provided for in Subsection 1 of Section 54-52.6-02, the public employees retirement system shall estimate the individual's accumulated balance transfer amount by calculating the actuarial present value of the individual's accumulated benefit obligation under the public employees retirement system based on the assumption that the individual will retire under the earliest applicable normal retirement age.

SECOND DRAFT:
Prepared by the Legislative Council staff for the Government Finance Committee
October 2014

Sixty-fourth
Legislative Assembly
of North Dakota

Introduced by

A concurrent resolution to amend and reenact section 24 of article X of the Constitution of North Dakota, relating to the foundation aid stabilization fund.

STATEMENT OF INTENT

This measure provides for additional purposes for the foundation aid stabilization fund.

BE IT RESOLVED BY THE OF NORTH DAKOTA, THE CONCURRING THEREIN:

That the following proposed amendment to section 24 of article X of the Constitution of North Dakota is agreed to and must be submitted to the qualified electors of North Dakota at the primary election to be held in June 2016, in accordance with section 16 of article IV of the Constitution of North Dakota.

SECTION 1. AMENDMENT. Section 24 of article X of the Constitution of North Dakota is amended and reenacted as follows:

Section 24. Twenty percent of the revenue from oil extraction taxes from taxable oil produced in this state must be allocated as follows:

1. Fifty percent must be deposited in the common schools trust fund.
2. Fifty percent must be deposited in the foundation aid stabilization fund in the state treasury, the interest income of which must be transferred to the state general fund on July first of each year. The principal of the foundation aid stabilization fund may be expended ~~only~~ upon order of the governor, who may direct such a transfer only to offset ~~foundation~~state school aid reductions that were made by executive action pursuant to law due to a revenue shortage. Whenever the principal balance of the foundation aid stabilization fund exceeds fifteen percent of the general fund appropriation for state school aid for the most recently completed biennium as determined by the office of management and budget, 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.

SECOND DRAFT:
Prepared by the Legislative Council staff for the Government Finance Committee
October 2014

Sixty-fourth
Legislative Assembly
of North Dakota

Introduced by

A BILL for an Act to create and enact a new section to chapter 15.1-36 and a new section to chapter 54-52 of the North Dakota Century Code, relating to a school construction assistance loan fund and a public employee retirement stabilization fund; to amend and reenact section 21-10-06 of the North Dakota Century Code, relating to funds managed by the state investment board; to provide for transfers; and to provide for a contingent effective date.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new section to chapter 15.1-36 of the North Dakota Century Code is created and enacted as follows:

<u>School construction assistance loan fund.</u>

<u>The school construction assistance loan fund is a special fund in the state treasury. Moneys in the fund may be used only for low-interest school construction loans as designated by the legislative assembly. Any interest or other fund earnings must be deposited in the fund.</u>

SECTION 2. AMENDMENT. Section 21-10-06 of the North Dakota Century Code is amended and reenacted as follows:

21-10-06. Funds under management of board - Accounts.

1. Subject to the provisions of section 21-10-01, the board is charged with the investment of the following funds:
   a. State bonding fund.
   b. Teachers' fund for retirement.
   c. State fire and tornado fund.
   d. Workforce safety and insurance fund.
   e. National guard tuition trust fund.
   f. Public employees retirement system.
   g. Insurance regulatory trust fund.

h. State risk management fund.

i. Budget stabilization fund.

j. Health care trust fund.

k. Cultural endowment fund.

l. Petroleum tank release compensation fund.

m. Legacy fund.

n. Public employee retirement stabilization fund.

2. Separate accounting must be maintained for each of the funds listed in subsection 1. The moneys of the individual funds may be commingled for investment purposes when determined advantageous.

3. The state investment board may provide investment services to, and manage the money of, any agency, institution, or political subdivision of the state, subject to agreement with the industrial commission. The scope of services to be provided by the state investment board to the agency, institution, or political subdivision must be specified in a written contract. The state investment board may charge a fee for providing investment services and any revenue collected must be deposited in the state retirement and investment fund.

SECTION 3. A new section to chapter 54-52 of the North Dakota Century Code is created and enacted as follows:

Public employee retirement stabilization fund.

The public employee retirement stabilization fund is a special fund in the state treasury. Moneys in the fund may be used by the legislative assembly only for the purpose of addressing any unfunded retirement benefit obligations of public employee retirement plans. The state investment board shall supervise investment of the public employee retirement stabilization fund in accordance with chapter 21-10. Any interest or other fund earnings must be deposited in the fund.

SECTION 4. TRANSFER - FOUNDATION AID STABILIZATION FUND TO SCHOOL CONSTRUCTION ASSISTANCE LOAN FUND. During the period beginning July 1, 2016, and ending June 30, 2017, the office of management and budget shall transfer the sum of $250,000,000 from the foundation aid stabilization fund to the school construction assistance loan fund.

SECTION 5. TRANSFER - FOUNDATION AID STABILIZATION FUND TO PUBLIC EMPLOYEE RETIREMENT STABILIZATION FUND. During the period beginning July 1, 2016, and ending June 30, 2017, the office of management and budget shall transfer the sum of $200,000,000 from the foundation aid stabilization fund to the public employee retirement stabilization fund.

SECTION 6. CONTINGENT EFFECTIVE DATE. Sections 4 and 5 of this Act are contingent on the passage of __________ Concurrent Resolution No. ___________ by the sixty-fourth legislative assembly and approval of that resolution by the voters of this state. If Sections 4 and 5 of this Act take effect, the sections become effective on July 1, 2016.

NDTFFR Funding Update

The Issue

Like other investors around the country, NDTFFR experienced significant investment losses as a result of the 2008-09 global recession. A major loss of assets coupled with increasing liabilities (longer life expectancy, salary increases, and benefit changes) had a substantial impact on TFFR's long term funding outlook. Prior to the market meltdown, TFFR's funded level was about 80%. As of the July 1, 2014 actuarial valuation report, TFFR's funded level was 62%. The unprecedented decline in the global markets and the accompanying recession, along with the slow economic recovery, accelerated the need for TFFR to make changes.

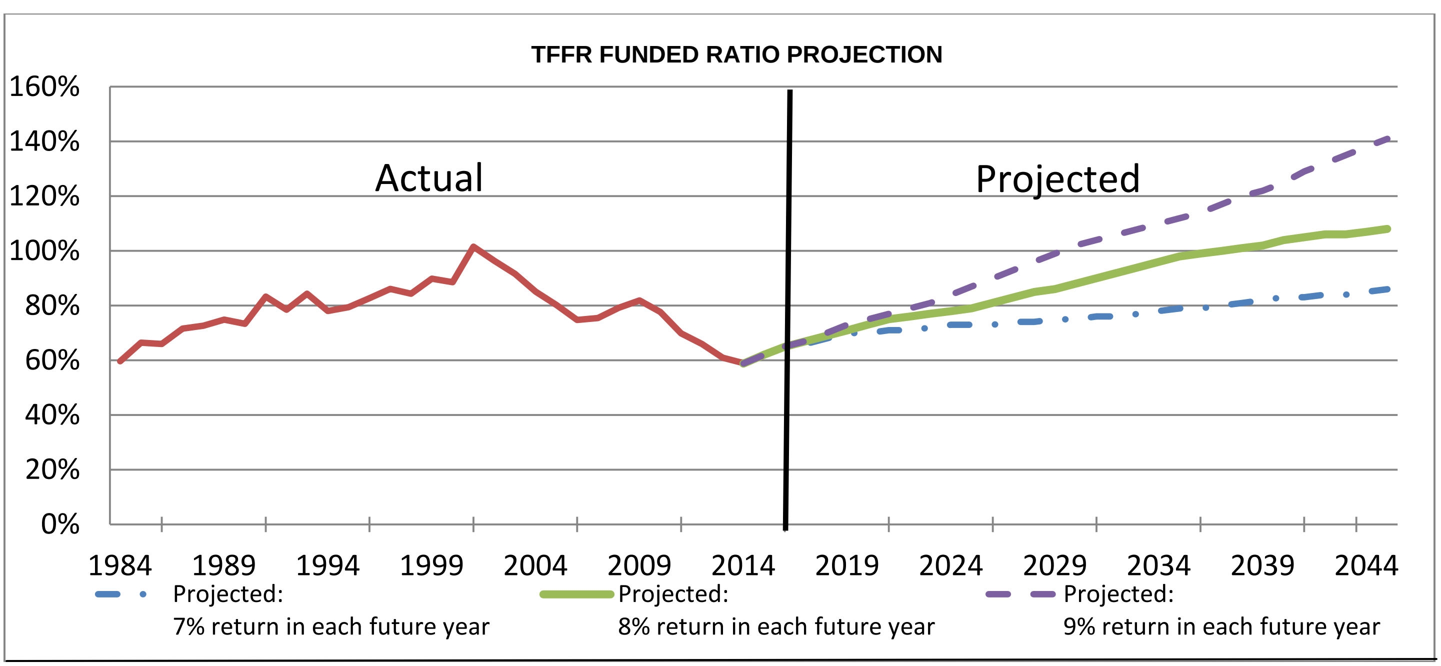
TFFR has the funds needed to pay current pension benefits when they are due. However, looking long term, there was a projected shortfall in the funding of TFFR benefits. TFFR's challenge was to stop the downward trend, stabilize funding, and improve funding levels.

The Plan

During 2009-10, the TFFR Board of Trustees, with input from member and employer interest group representatives, developed a legislative proposal to improve TFFR's funded status. The plan included member and employer contribution increases, and benefit changes for certain non grandfathered and new members of the plan. (See TFFR benefit summary on reverse page.) The plan was studied by the interim Legislative Employee Benefits Programs Committee during the 2010 interim, and given a favorable recommendation. The plan (HB 1134) was then carefully considered and approved by the 2011 Legislature, and signed by the Governor.

The Result

TFFR funding levels are expected to improve in the future now that the 2008-09 investment losses have been recognized in actuarial valuations over the 5-year smoothing period, and the increased member and employer contributions are flowing into the plan. However, time is needed for the changes made to show positive funding results. As you can see from the exhibit below, with the contribution and benefit changes, plus 8% investment returns (middle line) in the future, TFFR's funded level is projected to reach 80-100% in 20-30 years. If returns are greater (top line) or less (bottom line) than 8%, funding progress will take more or less time. A long term focus is important in financing pensions. Due to legislative action, TFFR's long term funding outlook is positive, and benefits are secure for past, present, and future ND educators.



TFFR Plan Summary

	Tier 1 Grandfathered	Tier 1 Non-Grandfathered	Tier 2 All
Employee Contribution Rates (active and re-employed retirees)			
7/1/10 - 6/30/12	7.75%	7.75%	7.75%
7/1/12 - 6/30/14	9.75%	9.75%	9.75%
*7/1/14 ongoing	11.75%	11.75%	11.75%
Employer Contribution Rates			
7/1/10 - 6/30/12	8.75%	8.75%	8.75%
7/1/12 - 6/30/14	10.75%	10.75%	10.75%
*7/1/14 ongoing	12.75%	12.75%	12.75%
Vesting Period	3 yrs	3 yrs	5 yrs
Unreduced Retirement Eligibility			
Minimum Age	No	60	60
AND Rule	Rule 85	Rule 90	Rule 90
OR Normal Retirement Age	65	65	65
Reduced Retirement Eligibility			
Minimum Age	55	55	55
Reduction Factor	6%	8%	8%
Retirement Formula Multiplier	2%	2%	2%
X Final Average Salary	3 yr FAS	3 yr FAS	5 yr FAS
X Service Credit	Total years	Total years	Total years
Disability Retirement	Yes	Yes	Yes
Death/Survivor Benefits	Yes	Yes	Yes

Disability Retirement: Retirement Formula Multiplier (2%) X Final Average Salary (FAS) X Total Service Credit

Death/Survivor Benefits: Refund of account value or Life Annuity to survivor based on member's vesting status.

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

- ***Tier 1 Grandfathered*** *is a member, who as of 6/30/13, was less than 10 years away from retirement eligibility. Grandfathered member must be vested, and either age 55 or have a combined total of service credit and age which equals or exceeds 65 on 6/30/13.*
- ***Tier 1 Non Grandfathered*** *is a member, who as of 6/30/13, was more than 10 years away from retirement eligibility. Nongrandfathered member is less than age 55 and has a combined total of service credit and age which is less than 65 on 6/30/13.*

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

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

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **October 16, 2014**

SUBJ: **ND School Board Association Proposed Resolution**

The ND School Board Association (NDSBA) currently has a resolution relating to TFFR and PERS that is four years old and is scheduled to be dropped. Here is the existing language:

> *NDSBA shall support TFFR and PERS contribution increases as long as there are no enhancements to benefits until the plans are at least 90 percent funded and only if accompanied by employee contribution increases, benefit concessions, and adequate state funding to cover employer contribution increases in addition to normal foundation aid increases.*

At their October 24, 2014 meeting, NDSBA's Delegate Assembly will be considering a new proposed resolution relating to TFFR. The proposed resolution is attached.

Please review and plan to discuss at the October board meeting.

Enclosure

NORTH DAKOTA
SCHOOL BOARDS
ASSOCIATION
INCORPORATED
PO Box 7128
Bismarck ND 58507-7128

Proposed Resolution Approved by NDSBA Board of Directors

The NDSBA Board of Directors has approved the following resolution that will be presented for Delegate Assembly approval at the annual convention

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 meet the 100% threshold established by the state legislature.
3. A rollback to the pre-2008 contribution levels when the fund is determined to be at 70% of the actuarial liability amount.
4. Close the TFFR program to new hires effective July 1, 2015, and offer them participation in the state's PERS plan instead.
5. Terminate the TFFR defined benefit plan for active employees and roll participants account balances into the state's PERS plan, with any shortfall in plan assets to be made up by the state.

(NDSBA Board of Directors)

mark your calendar

2014 NDSBA Annual Convention
October 23-24, 2014
(new two-day format!)
Ramkota Hotel, Bismarck

2015 NSBA Annual Conference
March 21-23, 2015
Nashville, TN

2015 NDSBA Annual Convention
October 29-30, 2015
Ramkota Hotel, Bismarck

MEMORANDUM

TO: TFFR Board

FROM: Fay Kopp and Shelly Schumacher

DATE: October 16, 2014

SUBJ: GASB Planning Update

Staff from TFFR, PERS, and the State Auditor's Office are continuing to meet to develop plans for implementing the new GASB pension reporting standards, and to educate employers and stakeholder groups as information becomes available.

- **Required GASB Schedules and Information**

  Fay, Shelly, and Connie are working closely with plan auditors, CliftonLarsonAllen (CLA) and plan actuary, Segal, on GASB implementation details. We are currently in the process of drafting 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 has provided the necessary GASB 67 information as part of the 2014 valuation report, and plans to deliver GASB 68 information for employers by November 10, 2014.

- **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, 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 has selected a sample of seventeen TFFR employers based on guidance from the AICPA. To assist CLA with these audits, Shelly has contacted five of these employers to provide payroll information to CLA (sample letter to employers is attached). Once CLA audits the census data from the initial group of five employers, they will continue with the remaining 12 employers. We are hopeful that in the future, RIO's internal audit team will be able to assist CLA coordinate employer census data audits.

- **Employer Training**

  As you know, TFFR and PERS hired a governmental audit consultant to provide employer 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, auditors, and other interested stakeholders. Based on positive feedback from that training, and now that more detailed information is available, we have scheduled GASB 68 Employer Training for all TFFR and PERS participating employers and auditors. The training session is scheduled for December 11, 2014, at the Bismarck Events Center. (Sample employer invitation is attached). Eric Berman, governmental audit consultant, will present this training which will include a presentation describing the new standards, timing of implementation, actuarial/financial information to be provided by the plans, audit issues, and Q & A forum with TFFR, PERS, and State Auditor's Office representatives. This training will be videotaped and available on TFFR and PERS websites.

Details and issues continue to emerge as we work through this GASB implementation process. However, I am confident we have the team in place to successfully implement the new pension reporting standards in TFFR's financial statements, and to provide appropriate information and guidance for employers as they work with their auditors on incorporating required pension information into their financial statements next year.

Enclosures

Date

Business Manager/Financial Officer Name
Employer XYZ
Address

Re: TFFR Employer Census Data Audit - GASB 67 & 68

Dear Business Manager/Financial Officer:

As you are aware, the North Dakota Teachers' Fund for Retirement (TFFR) will be implementing GASB 67, Financial Reporting for Pension Plans, in its June 30, 2014 financial statements. Employers will be implementing GASB 68, Accounting and Financial Reporting for Pensions in your 2015 financial statements. In light of the new GASB pension standards, the American Institute of Certified Public Accountants (AICPA) recently issued guidance for auditing the new GASB 67 and 68 pension statements. That guidance requires plan auditors to test the completeness and accuracy of census data provided to the plan by participating employers.

Employer XYZ has been selected by the TFFR plan auditor, Clifton Larson Allen (CLA), to be included in its test sample of representative contributing employers. The following attributes for certain active employees on your Master Payroll File will be tested: Birth Date, Salary, and Service Credit/Hours.

In order to determine which active employees will be tested, CLA auditors are requesting that you upload your Master Payroll File for the fiscal year ending June 30, 2014 to its secure file transfer site by October 20, 2014. This file should include <u>all</u> employees, not just those reported to TFFR, and preferably in an Excel format. Instructions for completing that process are included with this letter. In the event you experience difficulties with the secure file transfer process, Ryan Altenburg, Audit Manager, Ryan.Altenburg@claconnect.com, is your CLA auditor contact.

CLA auditors are requesting the following fields to be included in the master payroll file provided if they are available and/or applicable:

- Employee ID
- First and last name
- SS# - last four digits
- Date of Birth
- Date of Hire
- Gross wages - itemized if possible (i.e. contract pay, extracurricular duties, sub pay, stipends, etc.)
- All deductions
- Net Wages

If any of these fields do not apply or are not available, then CLA auditors will work with whatever information you can provide, and will follow up with you if they have questions. We do understand that each employer is unique and since a standard report cannot be expected from everyone, CLA auditors are available if you need additional clarification.

Once CLA auditors review your Master Payroll File, they will send you the list of active employees for whose attributes they will need supporting documentation. Examples of acceptable supporting documentation are:

- Birth Date
  - I-9 Documentation (ie. Copy of driver's license or passport)
  - Birth certificate

- Salary
  - Employee contracts
  - Negotiated agreement including salary and extra-curricular schedules
  - Human resources form showing approved pay rate
  - School board minutes or other written agreements

- Service Credit / Hours
  - Total hours worked in fiscal year
  - Human resources form showing date of hire

- ESPB Licensure

CLA auditors may perform some of the audit testing and data reconciliation onsite. If so, CLA will contact you in advance to schedule the audit fieldwork.

This audit work must be completed so TFFR can issue the *Schedule of Pension Amounts by Employer* and the *Schedule of Collective Pension Amounts*. These AICPA recommended schedules will provide employers with the information you need for your June 30, 2015 Financial Statements to be in compliance with GASB 68.

Please contact TFFR's external auditor, CliftonLarsonAllen, with any questions you may have about the TFFR Employer Census Data Audit for GASB 67 & 68. As mentioned earlier, Ryan Altenburg, Audit Manager, Ryan.Altenburg@claconnect.com, is your CLA auditor contact.

Thank you for your cooperation. We greatly appreciate your assistance, and look forward to working with you to complete this required audit work as quickly and efficiently as possible.

Sincerely,

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

/710

ND Teachers' Fund for Retirement/ND Public Employees Retirement System/ND State Auditor's Office

TO: **TFFR and PERS participating employers and auditors**
State audit and fiscal personnel
Interested stakeholder groups

FROM: **TFFR, PERS, and State Auditor's Office**
DATE: **October 15, 2014**
SUBJ: **GASB 68 Employer Training Session**

Important changes in state, municipal, and school district financial reporting will be occurring in the next year. As many of you are aware, the Governmental Accounting Standards Board (GASB) recently approved two new statements which will substantially change financial reporting of public employee pensions by state and local governments. Statement 67 replaces the financial disclosure requirements for public plans like TFFR and PERS effective for plan years beginning after June 15, 2013. Statement 68 replaces the disclosure requirements for participating employers of public plans (school districts, cities, counties, state) effective for fiscal years beginning on or after June 15, 2014. See GASB website for more information: www.gasb.org/jsp/GASB/Page/GASBSectionPage&cid=1176163528472

TFFR and PERS have been working with the State Auditor's Office on an implementation and training plan with plan actuaries, auditors, and staff. Earlier this year we also formed a working group of TFFR and PERS participating employers and auditors to assist in this effort, and we greatly appreciate their valuable input.

TFFR, PERS, and the State Auditor's Office have scheduled a **GASB 68 Employer Training Session on Thursday, December 11, from 8:30 am – 12 noon in the Prairie Rose Rooms (Upstairs, Exhibit Hall) at the Bismarck Events Center.** This meeting is intended for representatives of TFFR and PERS participating employers including the administrator/ superintendent, business/ financial manager, and financial auditor. Please invite your auditor, and any other persons who may be interested in this topic. State audit and fiscal personnel, and other interested stakeholders have also been invited.

Mr. Eric Berman, a governmental audit consultant from Eide Bailly, will present the training which will include a presentation describing the new standards, timing of implementation, actuarial/financial information to be provided by the plans, audit issues, and Q & A forum with TFFR, PERS, and State Auditor's Office representatives.

We believe this training will be very beneficial for TFFR and PERS participating employers and auditors as you implement GASB 68 into your 2015 financial statements. A meeting agenda with program details will be provided at a later date. Please plan to attend this important training session. Thank you.

TFFR:	*Fay Kopp*	*fkopp@nd.gov*	*701-328-9885*
PERS:	*Sparb Collins*	*scollins@nd.gov*	*701-328-3900*
State Auditor's Office:	*Ron Tolstad*	*rtolstad@nd.gov*	*701-328-2243*

RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES UNIT
AUDIT ACTIVITIES REPORT
FOR THE YEAR ENDED JUNE 30, 2014

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

Our audit coverage is based on the Fiscal Year July 1, 2013 through June 30, 2014 Work Plan. The Work Plan is consistent with the Audit Unit charter and goals, and the goals of RIO. To the extent possible, our audits are being carried out in accordance with the International Standards for the Professional Practice of Internal Auditing. Audit effort is being directed to the needs of RIO and the concerns of management and the SIB Audit Committee.

REGULAR AUDIT COVERAGE

- **Office Administration – Executive Limitations**

We annually review executive performance of the Executive Director/Chief Investment Officer to determine compliance with the SIB's Executive Limitations policy. The Audit Committee agreed to forego the audit by the Audit Services Unit in 2013/14 due to the following reasons:

1. The audit work is normally performed during the third quarter timeframe (Jan/Feb. 2014) for the calendar year of 2013. The Executive Director started employment with RIO in December of 2013. This did not provide sufficient information for the review.
2. The Committee wanted the new Supervisor of Audit Services to review the process and procedures to determine if the audit is evaluating the appropriate controls for the governance policy and procedures.
3. The Executive Director will work with internal RIO staff to compile documentation to support a review of the Executive Limitations adherence in advance of a new Supervisor of Audit Services joining the RIO team on October 13, 2014.

<u>Retirement Program</u>

- **School District Reporting**

We examined school district reporting to the Teachers' Fund for Retirement (TFFR) to determine that retirement salaries reported for members of TFFR are in compliance with the definition of salary as it appears in NDCC 15-39.1-04(9). Other reporting procedures reviewed during the audit process are calculation of service hours and eligibility for TFFR membership. A written report was issued after each audit examination was completed.

The 2013/14 Work Plan included a goal of 52 district audits and 7 not in compliance reviews. However, due to the Audit Supervisor's retirement on July 12, 2013, a tentative goal of 20 to 24 District audits and 4 not in compliance audits was set for the one auditor. As of June 30, 2014, 22 District audits were completed (21 in compliance and 1 generally in compliance). We also reviewed information for three Districts found not in compliance in past years. These Districts had corrected the errors and no further review was required. At the end of the year, there were three District audits and one not in compliance review in progress.

Reporting problems indentified through the audit process were as follows:

- Eligible salary not reported – athletic supervision, coaching, in-staff subbing, summer salary, and test proctoring
- Ineligible salary reported – busing, car maintenance, conversion of a fringe benefit on an individual basis, and library aide
- Reported salary in the wrong fiscal year
- Reported contract salary incorrectly due to a model assessment calculation
- Reported salary without a written agreement
- Missing written agreements for summer salary
- Reported service hours incorrectly

This is an area that required special emphasis due to the level of risk identified through previous audit results. Our long-range plans include auditing each district over a five year period. A copy of the report of Districts' audits completed in 2013/14 was forwarded to the external auditor.

Statistics for the fiscal year ending June 30, 2014

Total districts at beginning of third cycle (Jan. 2010)	231
Less: County and State institutions not included	- 19
Districts with 10 or fewer members	- 29
Consolidations and closures	- 11
Employers to be audited in the third cycle	172
Completed audits in the third cycle	129
Remaining audits	43
Adjustment due to a not in compliance review	1
	44

- **TFFR File Maintenance**

Journals were generated daily and monthly indicating any file maintenance changes made. We quarterly tested changes made to TFFR member account data by RIO employees. For the four quarters, two exceptions were noted in the third quarter. Birthdates were not transferred correctly from the member action forms to the members' accounts. Retirement Services corrected the two accounts. We recommended due care when entering information into the system. Copies of the four reports were forwarded to the external auditor.

- **2013/14 Benefit Audit – a review of Deaths, Long Outstanding Checks, and Long Term Annuitants, Purchase of Service, and Refunds**

A review of deaths, purchase of service, refunds, long outstanding checks, and long term annuitants was completed to determine that established policy and procedures were being followed by the Retirement Services division.

No exceptions were noted. A copy of the report was forwarded to the external auditor.

FINANCIAL AUDIT RESULTS

The annual financial audit of the Retirement and Investment Office for the year ended June 30, 2014, was conducted by independent auditors from the accounting firm CliftonLarsonAllen. The firm will present the audit results to the Audit Committee at the November 2014 meeting.

SUMMARY

At the direction of the Audit Committee, audit effort was directed to activities that were the greatest concern to the Committee, RIO Management, and the independent auditor. Based on the results of our audits, and the audit performed by the independent auditor, we formed the opinion that adequate controls have been provided over these activities, and that the controls were working effectively and efficiently.

We consider the Retirement Services Division to be highly effective in accomplishing its assigned responsibilities. We contribute this to a knowledgeable staff, good communications and feedback between management and staff; thorough on-the-job training for staff; and comprehensive job instructions.

LOOKING AHEAD

The Audit Services Division will continue to work closely with management, the independent auditors, and the SIB Audit Committee to increase the efficiency, effectiveness, and economy of the total audit activity. A focus of the audit function has been on external entities reporting to RIO (District audits for TFFR). We will continue to conduct these audits. However, due to new GASB 67 and 68 pension reporting standards, we will work with the independent auditor to re-evaluate the District compliance audits and reporting process.

The Audit Committee, RIO Management, and the Supervisor of Audit Services will also commence a review of the audit charter, governance manual, and certain investment related policies and procedures for consistency and completeness.

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES
THIRD AUDIT CYCLE
SCHOOL DISTRICT COMPLIANCE AUDITS

Total Members served in the third audit cycle	10,138
Total Audits completed in the third audit cycle	132
Audits in progress	3
Remaining Districts to be audited	41
Total Audits in the third cycle	176

In compliance	107	As of 6/30/2014
Generally in compliance	14	
Not in compliance	11	
	132	

10 members or less	29	(Not audited)
State agencies/other	19	(Not audited)
Consolidations/closures	11	
More than 10 members	172	(audited)
Total District	231	

FISCAL YEAR 2009/ 2010 (finished cycle 2 and started cycle 3-one-half of the year)

Barnes County North	3/26/2010	47	Generally in compliance		
Belfield	5/17/2010	27	In compliance		
Bottineau	4/29/2010	63	In compliance		
Central Cass	6/21/2010	64	In compliance		
Edinburg	5/27/2010	16	In compliance	I/C	16
Ellendale	5/12/2010	35	In compliance	GIC	2
Garrison	6/3/2010	39	In compliance	NIC	0
Grenora	6/22/2010	16	In compliance	Audits	18
Harvey	5/17/2010	43	In compliance	Cycle 2	17
Larimore	1/12/2010	51	In compliance		35
Lidgerwood	5/3/2010	21	In compliance		
Max	1/19/2010	23	In compliance		
Roosevelt/Carson	4/30/2010	21	In compliance		
Rugby	3/15/2010	59	In compliance		
Sargent Central	1/15/2010	27	Generally in compliance		
Scranton	4/13/2010	21	In compliance		
South Valley Spec. Education	11/12/2009	39	In compliance		
Valley City School	2/8/2010	85	In compliance		
18		697	Teachers		

FISCAL YEAR 2010/ 2011 (full year)

Alexander	2/14/2011	14	In compliance		
Bowman	8/11/2010	47	Generally in compliance		
Burke Central	7/29/2010	22	In compliance		
Glenburn	6/16/2011	30	Generally in compliance	I/C	7
Grafton	4/5/2011	88	Generally in compliance	GIC	5
Griggs County Central	6/24/2011	65	Generally in compliance	NIC	2
Halliday	6/22/2011	12	Not in compliance	Audits	14
Hettinger	10/25/2010	35	In compliance		
Lakota	12/14/2010	26	In compliance		
Minot	7/22/2010	629	In compliance		
Tioga	4/14/2011	30	In compliance		
United	4/1/2011	49	Generally in compliance		
Velva	5/17/2011	49	Not in compliance		
Washburn	5/9/2011	27	In compliance		
14		1,123			

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES
THIRD AUDIT CYCLE
SCHOOL DISTRICT COMPLIANCE AUDITS

FISCAL YEAR 2011/ 2012 (full year)

Anamoose	7/25/2011	17	In compliance		
Beulah	1/6/2012	64	In compliance		
Bowbells	3/14/2012	13	In compliance		
Carrington	2/22/2012	51	In compliance		
Cavalier	12/30/2011	49	In compliance		
Central Valley	10/25/2011	24	In compliance		
Dakota Prairie	5/25/2012	37	In compliance		
Divide	12/29/2011	32	In compliance		
Drayton	11/8/2011	24	In compliance	I/C	25
Edgeley	5/29/2012	29	In compliance	GIC	2
Eight Mile	12/5/2011	24	Not in compliance	NIC	3
Fairmount	5/29/2012	17	In compliance	Audits	30
Finley-Sharon	5/21/2012	24	In compliance		1 NIC
Gackle-Streeter	4/26/2012	15	Generally in compliance		
Hatton	6/13/2012	24	In compliance		
Hillsboro	1/4/2012	38	In compliance		
Hope	6/12/2012	11	In compliance		
Kidder County	3/14/2012	50	In compliance		
LaMoure	12/27/2011	29	In compliance		
Langdon Area Schools	4/3/2012	41	In compliance		
Leeds	10/27/2011	21	Generally in compliance		
Linton	1/23/2012	33	In compliance		
Lisbon	11/23/2011	56	In compliance		
Mandan	1/31/2012	297	In compliance		
Mandaree	5/21/2012	33	In compliance		
McKenzie County	8/4/2011	51	In compliance		
Milnor	6/6/2012	28	In compliance		
Richardton-Taylor	12/30/2011	31	In compliance		
Solen-Cannonball*	1/10/2012	41	2011/12 review required		
Williston	5/23/2012	198	Not in compliance		
Wilton	10/3/2011	23	In compliance		
30		1,425			

*District was not in compliance in 2008/09 and 2009/10 (second cycle). Audit policy is to review a sample of salary one year after the audit to ensure reporting practices were amended.

FISCAL YEAR 2012/ 2013 (full year)

Ashley	2/21/2013	19	In compliance
Beach	3/25/2013	40	In compliance
Belcourt	3/5/2013	150	In compliance
Bismarck	9/13/2012	1054	In compliance
Center-Stanton	4/4/2013	26	In compliance
Drake	3/25/2013	13	In compliance
Dunseith	4/30/2013	56	Not in compliance
Enderlin	3/21/2013	36	In compliance
Fessenden-Bowdon	4/4/2013	19	In compliance
Fort Yates	1/16/2013	88	Not in compliance
Hankinson	4/24/2013	31	In compliance
Hazen	5/13/2013	50	In compliance
Kenmare	5/23/2013	32	In compliance
Killdeer	9/18/2012	45	In compliance
Kindred	2/26/2013	52	Not in compliance

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES
THIRD AUDIT CYCLE
SCHOOL DISTRICT COMPLIANCE AUDITS

Mapleton Elementary	5/16/2013	11	In compliance	I/C	38
McClusky	7/30/2012	22	Not in compliance	GIC	1
Minnewaukin	3/12/2013	33	Not in compliance	NIC	6
Mott-Regent	11/6/2012	31	In compliance	Audits	45
Mt. Pleasant	5/16/2013	33	In compliance		
Napoleon	11/9/2012	29	In compliance		
Newburg	9/13/2012	19	In compliance		
New England	7/17/2012	21	In compliance		
New Rockford/Sheyenne	6/12/2013	35	In compliance		
New Salem/Almont	5/31/2013	31	In compliance		
New Town	5/16/2013	76	In compliance		
North Sargent	4/29/2013	25	In compliance		
North Star	1/16/2013	31	In compliance		
Northern Cass	5/20/2013	48	In compliance		
Northwood	12/14/2012	28	In compliance		
Oakes	6/12/2013	38	In compliance		
Park River	3/12/2013	48	In compliance		
Powers Lake	1/3/2013	23	Not in compliance		
Richland (Colfax)	5/15/2013	34	In compliance		
Rolette	2/21/2013	23	Generally in compliance		
Rural Cass Special Ed.	5/1/2013	20	In compliance		
St. Thomas	5/29/2013	18	In compliance		
Sawyer	5/10/2013	21	In compliance		
Souris Valley	2/20/2013	28	In compliance		
Stanley	2/25/2013	56	In compliance		
Strasburg	3/8/2013	20	In compliance		
Thompson	4/5/2013	37	In compliance		
Underwood	2/7/2013	29	In compliance		
Upper Valley Spec. Ed.	5/20/2013	45	In compliance		
Wahpeton	6/14/2013	112	In compliance		

Not in compliance reviews:

Eight Mile	5/8/2013		Salaries OK-no further review
Halliday	6/28/2013		Salaries not in compliance - Will look at again 2014/15
Solen-Cannonball	6/27/2013		Salaries OK-no further review
Velva	5/1/2013		Salaries OK-no further review
45		2,736	

FISCAL YEAR 2013/ 2014 (full year)

East Central Except. Child	6/23/2014	15	In compliance		
Elgin/New Leipzig	5/21/2014	21	In compliance		
GST Educational Services	1/7/2014	32	In compliance		
Hebron	11/14/2013	28	In compliance		
Jamestown	7/19/2013	225	In compliance	I/C	21
Maddock	3/12/2014	21	In compliance	GIC	1
Manvel Elementary	2/27/2014	22	In compliance	NIC	0
Medina	4/2/2014	23	In compliance	Audits	22
Midkota	1/16/2014	23	In compliance		
Midway	2/19/2014	29	In compliance		
Minto	4/7/2014	24	In compliance		
Nedrose	12/9/2013	19	In compliance		
Pingree-Buchanan	4/23/2014	20	In compliance		

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE
AUDIT SERVICES
THIRD AUDIT CYCLE
SCHOOL DISTRICT COMPLIANCE AUDITS

Sheyenne Valley Spec. Ed.	7/18/2013	27	In compliance
Surrey	8/5/2013	40	In compliance
TGU	8/22/2013	43	In compliance
Turtle Lake-Mercer/ -Great Western Network	12/5/2013	58	Generally in compliance
Westhope	10/14/2013	22	In compliance
West River Student Services	5/9/2014	15	Incompliance
Wishek	9/23/2013	21	In compliance
Wyndemere	9/30/2013	29	In compliance
Zeeland	5/28/2014	12	In compliance
		754	
Not in compliance reviews:			
Dunseith	6/20/2014	54	Salaries OK-no further review
Kindred	2/11/2014	54	Salaries OK-no further review
Power's Lake	1/30/2014	19	Salaries OK-no further review
22		754	

North Dakota Retirement and Investment Office
Audit Services
SCHOOL DISTRICT COMPLIANCE AUDITS
July 1, 2013 through June 30, 2014

			SCHOOL DISTRICT	FISCAL YEARS	MEMBERS IN DISTRICT	REPORT DATE	MEMBER/ EMPLOYER CONTRIB'S DR(CR)	MEMBER'S SALARIES ADJUSTED	MEMBER SERVICE CREDIT ADJUSTED	STATUS
	✔		**School audits completed**				**In compliance**		**21**	
							Generally in compliance		**1**	
							Not in compliance		**0**	
									22	
1	✔	DT	East Central Ctr Except. Child	6/30/13, 12	15	6/23/2014	0.00	0	0	In compliance There were no errors noted.
2	✔	DT	Elgin/New Leipzig	6/30/13, 12	21	5/21/2014	0.00	0	0	In compliance Reported service hours incorrectly for three part-time out-of-district teachers.
3	✔	DT	GST Educational Services	6/30/12, 11	32	1/7/2014	(56.31)	2	1	In compliance The District did not issue written agreements to all summer teachers; summer salary reported in the wrong fiscal year; and service hours reported incorrectly.
4	✔	DT	Hebron	6/30/12, 11	28	11/14/2013	(690.00)	1	0	In compliance Reported ineligible conversion of health insurance to salary-individual basis; reported part-time teacher salary without a written agreement.
5	✔	DT	Jamestown	6/30/12, 11	225	7/19/2013	0.00	0	1	In compliance The District reported service hours incorrectly.
6	✔	DT	Maddock	6/30/12, 11	21	3/12/2014	0.00	0	0	In compliance Did not issue written agreements for summer salary.
7	✔	DT	Manvel Elementary	6/30/12, 11	22	2/27/2014	0.00	0	4	In compliance Reported salary/service hours incorrectly for 1 retired member; and reported service hours incorrectly for part-time teachers.
8	✔	DT	Medina	6/30/12, 11	23	4/2/2014	(35.63)	2	0	In compliance The District reported salary in the wrong fiscal year; and did not report eligible in-staff subbing and test proctoring salary.
9	✔	DT	Midkota	6/30/12, 11	23	1/16/2014	(850.00)	1	2	In compliance Reported an ineligible benefit as salary; service hours reported incorrectly for part-time members.

North Dakota Retirement and Investment Office
Audit Services
SCHOOL DISTRICT COMPLIANCE AUDITS
July 1, 2013 through June 30, 2014

			SCHOOL DISTRICT	FISCAL YEARS	MEMBERS IN DISTRICT	REPORT DATE	MEMBER/ EMPLOYER CONTRIB'S DR(CR)	MEMBER'S SALARIES ADJUSTED	MEMBER SERVICE CREDIT ADJUSTED	STATUS
	✔		**School audits completed**				**In compliance**		**21**	
							Generally in compliance		**1**	
							Not in compliance		**0**	
									22	
10	✔	DT	Midway	6/30/12, 11	29	6/14/2013	(920.06)	2	0	In compliance Reported ineligible busing; and did not report eligible subbing (isolated occurrence).
11	✔	DT	Minto	6/30/12, 11	24	4/7/2014	0.00	0	0	In compliance No exceptions were noted.
12	✔	DT	Nedrose	6/30/12, 11	19	12/9/2013	0.00	0	0	In compliance No exceptions noted.
13	✔	DT	Pingree-Buchanan	6/30/13, 12	20	4/23/2014	0.00	0	0	In compliance Reported salary for coaching for an out-of-district member without a written agreement; and reported service hours incorrectly for two part-time summer teachers.
14	✔	DT	Sheyenne Valley Special Ed.	6/30/12, 11	27	7/18/2013	173.40	1	0	In compliance Did not issue written agreements for summer salary; and did not report summer salary (isolated occurrence).
15	✔	DT	Surrey	6/30/12, 11	40	8/5/2013	482.03	4	1	In compliance Did not issue written agreements for summer salary; reported service hours incorrectly; and did not report student supervision at athletic events.
16	✔	DT	TGU	6/30/12, 11	43	8/22/2013	0.00	0	0	In compliance No exceptions noted.
17	✔	DT	Turtle Lake-Mercer- Great Western Network	6/30/12, 11	58	12/5/2013	284.10	2	1	Generally in compliance District did not issue written agreements for summer salary; reported incorrect contract salary; reported summer salary in the wrong fiscal year; reported ineligible car maintenance salary; reported service hours incorrectly for a retired member; and GWN did not issue written agreements for two members.

North Dakota Retirement and Investment Office
Audit Services
SCHOOL DISTRICT COMPLIANCE AUDITS
July 1, 2013 through June 30, 2014

			SCHOOL DISTRICT	FISCAL YEARS	MEMBERS IN DISTRICT	REPORT DATE	MEMBER/ EMPLOYER CONTRIB'S DR(CR)	MEMBER'S SALARIES ADJUSTED	MEMBER SERVICE CREDIT ADJUSTED	STATUS
	✔		**School audits completed**				**In compliance**		**21**	
							Generally in compliance		**1**	
							Not in compliance		**0**	
									22	
18	✔	DT	Westhope	6/30/12, 11	22	10/14/2013	(1,480.08)	1	2	In compliance Reported ineligible library aide salary; and reported service hours incorrectly for two retired teachers.
19	✔	DT	West River Student Services	6/30/13, 12	15	5/9/2014	0.00	0	0	In compliance Did not have a written agreement for summer salary; and reported service hours incorrectly for one member.
20	✔	DT	Wishek	6/30/12, 11	21	9/23/2013	4,912.64	1	1	In compliance Did not report eligible coaching and subbing; reported ineligible busing; contract salary reported incorrectly due to model 3 assessment; and reported service hours incorrectly.
21	✔	DT	Wyndemere	6/30/12, 11	29	9/30/2013	0.00	0	0	In compliance The District did not have written agreements for summer salary.
22	✔	DT	Zeeland	6/30/13, 12	12	5/28/2014	0.00	0	0	In compliance No errors noted.
				Totals	769		1,820.09	17	13	
			Not in compliance reviews							
1	✔	DT	Dunseith	6/30/2013	54	6/23/2014	0.00	0	0	Salaries OK-no further review.
2	✔	DT	Kindred	6/30/2013	54	2/11/2014	0.00	0	0	Salaries OK-no further review
3	✔	DT	Powers Lake	6/30/2013	19	1/30/2014	0.00	0	0	Salaries OK-no further review
					127		0.00	0	0	

MEMORANDUM

TO: **TFFR Board**

FROM: **Fay Kopp**

DATE: **October 16, 2014**

SUBJ: **Trustee Education/NCTR Conference**

TFFR trustees Kim Franz and Mel Olson recently attended the NCTR Annual Conference in Indianapolis (agenda enclosed). They will provide a brief update to the Board on the education they received at the Conference.

Enclosure

92nd Annual Conference

Plan. Invest. Protect.

Agenda

◆◆◆

JW Marriott • Indianapolis, Indiana • October 11–15, 2014

◆◆◆

Saturday, October 11

1:00–5:30 pm **Registration**

Committee Meetings:

Noon–1:00 pm	Legislative Committee Meeting
1:00–1:30 pm	Resolutions Committee Meeting
1:30–2:30 pm	Trustee Education Committee Meeting
2:30–3:30 pm	Administrator Education Committee Meeting

6:00–7:00 pm **Welcome Reception**
Dinner on your own

Sunday, October 12

7:30–8:30 am and 2:30–5:30 pm Registration

9:00 am **Shuttle to Brunch**

9:30 am–1:30 pm **All-Attendee Networking Brunch**

3:00–4:30pm ***Pre-Conference Seminar:*** **What's Going On in the States?**
Moderator: Tom Lussier, President, Lussier, Gregor, Vienna, & Associates, Inc.
- Mary Beth Braitman, Ice Miller
- Tom Cavanaugh, CEO, Cavanaugh Macdonald Consulting LLC
- Dana Dillon, Board Trustee, CalSTRS
- Brian Guthrie, Executive Director, Texas TRS
- Luke Martel, Sr. Policy Specialist, National Conference of State Legislatures
- Steve Russo, Executive Director, Indiana PRS

5:30–6:30 pm **Welcome Reception**
Dinner on your own

Monday, October 13

7:30 am–5:00 pm Registration

7:30–8:15 am **Breakfast**

FIRST GENERAL SESSION

Presiding: Tom Lee, NCTR President; and Executive Director/CIO, New York STRS

8:15 am **Opening of Conference**
- Welcome to the Conference: Tom Lee, NCTR President
- Pledge of Allegiance
- Welcome to Indianapolis: Steve Russo, Executive Director, Indiana PRS

9:00–10:00 am **Monday Keynote Speaker: Mara Liasson, National Political Correspondent, NPR**
Introduction: Jim White, Business Development, William Blair & Company, L.L.C.
SPEAKER SPONSORSHIP BY WILLIAM BLAIR & COMPANY, L.L.C.

92nd Annual Conference

Plan. Invest. Protect.

Agenda

Monday, October 13 (continued)

10:00–10:30 am Break

10:30–11:30 am **Retirement Challenges**
Moderator: Jack Ehnes, CEO, CalSTRS
- Dean Baker, Co-Director, Center for Economic and Policy Research
- Diane Oakley, Executive Director, NIRS
- Dallas Salisbury, President/CEO, EBRI

11:45 am Break for Group Luncheon

11:45am–1:15pm **Group Luncheon**
- Charles L. Evans, President and CEO, Federal Reserve Bank of Chicago
  Introduction: John A. Gorham, Business Development & Client Relations, Cornerstone Real Estate Advisers LLC

FIRST GENERAL SESSION resumes

1:30–2:30 pm **Perspectives on Board Governance**
Moderator: Carole Wright, Board Chair, Colorado PERA
- Michael Hairston, Board Member, ERFC, Fairfax, VA
- Beth Kerr, Board Member, Oklahoma TRS
- Amy L. McDuffee, Associate Partner, Hewitt EnnisKnupp

2:30–3:00 pm Break

3:00–4:30 pm **Evolution of Investment Management**
Moderator: Thomas K. Lee, Executive Director/CIO, New York STRS
- Stephen Cummings, CFA, CEO, Hewitt EnnisKnupp, Inc.
- Drew Guff, Managing Director, Siguler Guff
- Josh B. McGee, PhD; Vice President of Public Accountability
  Laura and John Arnold Foundation
- Greg Mennis, Director, Pew Public Sector Retirement Systems Project
- Gregory W. Smith, Executive Director, Colorado PERA

4:30 pm End of First General Session

6:00–7:00 pm **Reception**

7:00–9:00 pm **NCTR Annual Dinner**
A Conversation with Maxie L. (Max) Patterson, Executive Director, TEXPERS, and Meredith Williams, NCTR Executive Director

92nd Annual Conference

Plan. Invest. Protect.

Agenda

Tuesday, October 14

7:30 am–Noon	Registration
8:00–8:45 am	**Breakfast**

SECOND GENERAL SESSION

Presiding: Jim Sando, NCTR President-Elect; and Trustee, Pennsylvania PSERS

9:00–10:00 am **Tuesday Keynote Speaker: Ian Morrison, PhD, Author, Consultant, Futurist**
Introduction: Bill Pacula, Partner, Director of Marketing, Baillie Gifford International LLC
SPEAKER SPONSORSHIP BY BAILLIE GIFFORD INTERNATIONAL LLC

10:00–10:30 am Break

10:30–11:30 am **Legislative Session with Leigh Snell**

- Jill Bachus, NCTR Executive Committee Liaison and Executive Director of Tennessee Consolidated Retirement System
- Dean Kenderdine, NCTR Legislative Committee Chair; and Executive Director, Maryland SRPS

11:45 am Break for Group Luncheon

11:45 am–1:15pm **Group Luncheon**

SECOND GENERAL SESSION resumes

1:30–2:30 pm **Private Equity**
Moderator: Dick Ingram, Executive Director, Illinois TRS

- James Gereghty, Managing Director, Siguler Guff
- Kelly Meldrum, CFA; Partner, Adams Street Partners
- Tim Moore, Director of Alternative Investments, Colorado PERA

2:30–3:00 pm Break

3:00–4:00 pm **Legal Officers Panel**
Moderator: Richard Lorant, Director of Marketing & Client Relations, Berman DeValerio

- Kimberly Gardner, Senior Staff Attorney, Colorado PERA
- Laura Gilson, General Counsel, Arkansas TRS
- Jim Salvie, General Counsel, Massachusetts TRS

4:00 pm End of Second General Session

4:00–5:00 pm **Open Forum for Associate Commercial Members**
Moderator: Jack Gastler, SVP, Acadian Asset Management LLC
NCTR's Associate Commercial Members are invited to meet with NCTR's Executive Director Meredith Williams and Assistant Executive Director Robyn Gonzales for a candid, unstructured conversation.

6:00–7:00 pm **Reception**

7:00–9:00 pm **National Teacher of the Year Dinner, followed by address**
Sparking Hope: Teaching as a Catalyst to Launching Great Learning
Sean McComb, High School English Teacher, Baltimore, Maryland

92nd Annual Conference

Plan. Invest. Protect.

Agenda

Wednesday, October 15

7:30–8:15 am	**Breakfast**

THIRD GENERAL SESSION

Presiding: Jay Stoffel, NCTR Secretary/Treasurer; and Deputy Exec. Dir., Minnesota TRA

8:30–9:30 am — **Wednesday Keynote Speaker: Becky Pringle, Vice President, National Education Association (NEA)**

9:30–10:30 am — **GASB: Communications Challenges**

Moderator: Cathie Eitelberg, SVP, National Dir., Public Sector, Segal Group

- Barrie Tabin Berger, Assistant Director–Federal Liaison Center, GFOA
- Don Drum, Executive Director, PERS of Idaho
- Ryan Falls, Senior Consultant, Gabriel, Roeder, Smith & Company
- Lisa Morris, Executive Director, Ohio SERS
- Dearld Snider, Deputy Director, Missouri PSRS/PEERS

10:30–11:00 am — Break

11:00 am — **Plans as Investors: A CIO Conversation**

Moderator: Deirdre Guice Minor, Executive Director, UBS Global Asset Management (Americas) Inc.

- Britt Harris, CIO, Texas TRS
- Mansco Perry III, Executive Director, Minnesota State Board of Investment
- Ash Williams, Exec. Director & CIO, Florida State Board of Administration

12:30 pm — End of Third General Session

1:00 pm — **System Trustee Luncheon** *(Spouses welcome)*

- Dan Pedrotty, Director of Pensions and Capital Strategies, American Federation of Teachers (AFT)

1:00 pm — **System Director Luncheon** *(Spouses welcome)*

1:00 pm — **All others on own for lunch**

NCTR ANNUAL BUSINESS MEETING

Presiding: Tom Lee, NCTR President; and Executive Director/CIO, New York STRS

2:30 pm — **Welcome**

- Committee Reports
- Election of Officers
- Update on NCTR by Executive Director Meredith Williams

6:00 pm — **Depart for offsite dinner event**

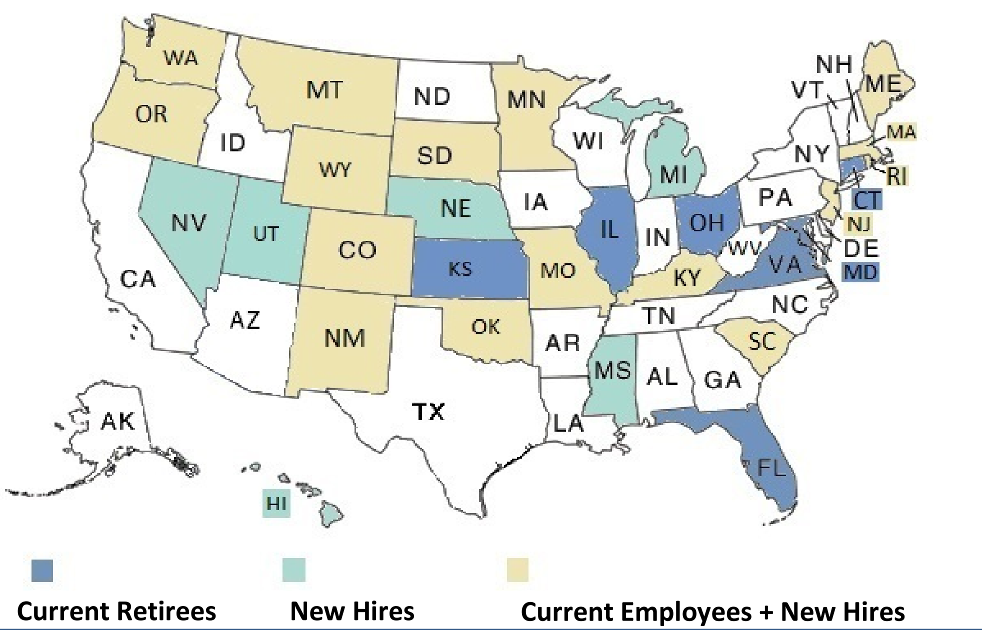
6:30 pm — **Dinner—Last night casual event** (OFF-SITE)

Significant Reforms in State Retirement Systems

NASRA

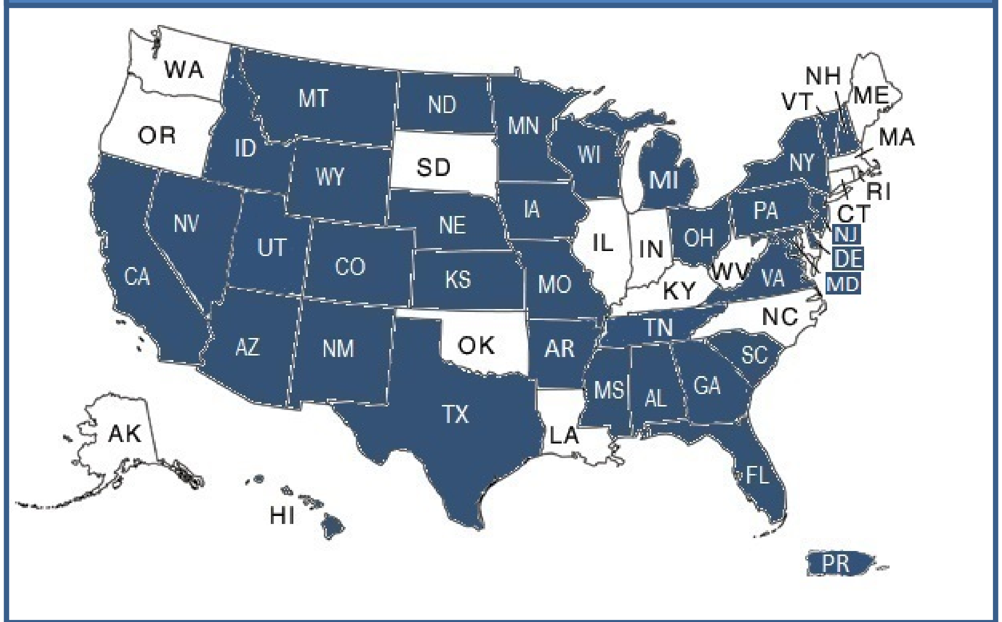
Since the Great Recession, nearly every state has taken steps to modify their public pension plans. The issue briefs described below document recent changes in cost-of-living adjustments, employee contributions and plan design, and a compendium provides detailed descriptions of these and other recently approved legislative enactments to state retirement plans.

States that have modified COLAs 2009-2012



Public pension cost-of-living adjustments (COLAs) have received increased attention as many states look to reduce the cost of benefits amid challenging fiscal conditions and the current low-inflation environment. Since 2009, a majority of states has modified COLAs affecting retired members, current employees, and/or future employees. www.NASRA.org/COLAbrief

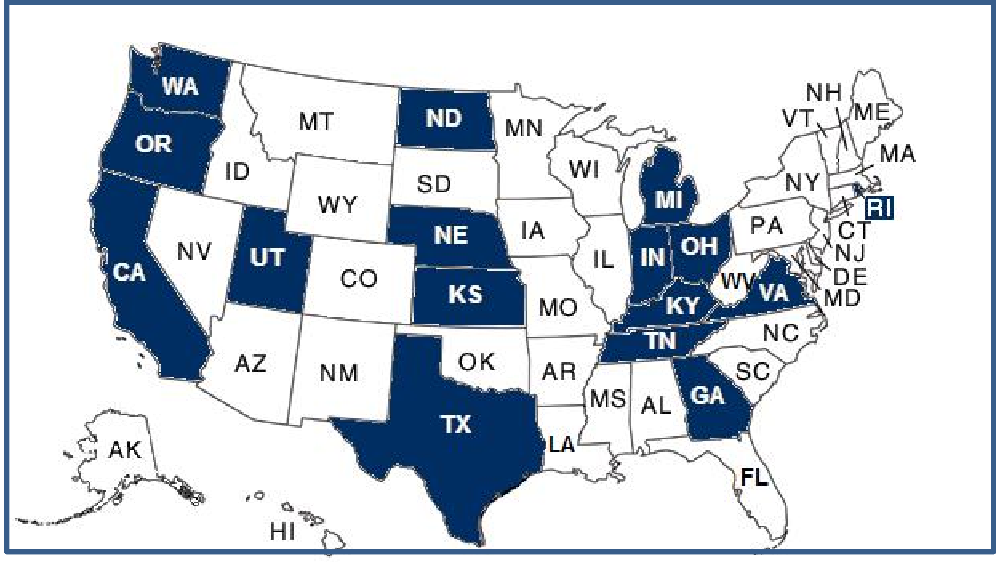
States that have increased employee contributions since 2009



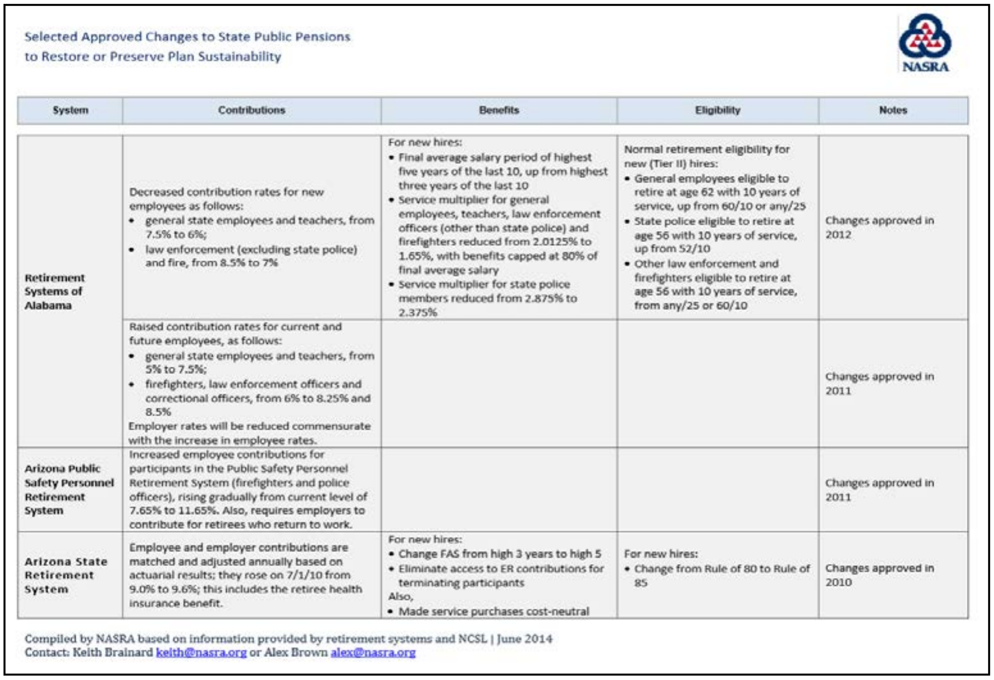
Nearly all employees of state and local government are required to share in the cost of their retirement benefits. Thirty-five states (and Puerto Rico) recently have increased employee contribution rates. While some changes affect new hires only, many states have required current employees to contribute more. www.NASRA.org/contributionsbrief

Significant Reforms in State Retirement Systems

States that administer CB or DB+DC plans as mandatory or optional primary retirement benefit for general or K-12 educational employees



Most public pension plans are hybrid in nature, in that some degree of risk is borne either formally or de facto by both employers and their employees. www.NASRA.org/sharedriskbrief Although cash balance and combination DB/DC plans—two specific types of hybrid plans—have been in existence in the public sector for decades, these plan designs also recently have been adopted in a number of states. www.NASRA.org/hybridbrief



Selected Approved Changes to State Public Pensions to Restore or Preserve Plan Sustainability

NASRA

System	Contributions	Benefits	Eligibility	Notes
Retirement Systems of Alabama	Decreased contribution rates for new employees as follows: • general state employees and teachers, from 7.5% to 6%; • law enforcement (excluding state police) and fire, from 8.5% to 7%	For new hires: • Final average salary period of highest five years of the last 10, up from highest three years of the last 10 • Service multiplier for general employees, teachers, law enforcement officers (other than state police) and firefighters reduced from 2.0125% to 1.65%, with benefits capped at 80% of final average salary • Service multiplier for state police members reduced from 2.875% to 2.375%	Normal retirement eligibility for new (Tier II) hires: • General employees eligible to retire at age 62 with 10 years of service, up from 60/10 or any/25 • State police eligible to retire at age 56 with 10 years of service, up from 52/10 • Other law enforcement and firefighters eligible to retire at age 56 with 10 years of service, from any/25 or 60/10	Changes approved in 2012
	Raised contribution rates for current and future employees, as follows: • general state employees and teachers, from 5% to 7.5%; • firefighters, law enforcement officers and correctional officers, from 6% to 8.25% and 8.5% Employer rates will be reduced commensurate with the increase in employee rates.			Changes approved in 2011
Arizona Public Safety Personnel Retirement System	Increased employee contributions for participants in the Public Safety Personnel Retirement System (firefighters and police officers), rising gradually from current level of 7.65% to 11.65%. Also, requires employers to contribute for retirees who return to work.			Changes approved in 2011
Arizona State Retirement System	Employee and employer contributions are matched and adjusted annually based on actuarial results; they rose on 7/1/10 from 9.0% to 9.6%; this includes the retiree health insurance benefit.	For new hires: • Change FAS from high 3 years to high 5 • Eliminate access to ER contributions for terminating participants Also, • Made service purchases cost-neutral	For new hires: • Change from Rule of 80 to Rule of 85	Changes approved in 2010

Compiled by NASRA based on information provided by retirement systems and NCSL | June 2014
Contact: Keith Brainard keith@nasra.org or Alex Brown alex@nasra.org

In recent years, nearly every state has made meaningful changes to their pension benefit structures, financing arrangements or both. Detailed descriptions of recent legislative pension enactments by subject, and those made specifically to restore or preserve state plan sustainability, can be found at: [www.NASRA.org/reform.](www.NASRA.org/reform)

For More Information

www.nasra.org

NATIONAL ASSOCIATION OF STATE RETIREMENT ADMINISTRATORS

202.624.1417

nasra.org/contact

CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

STATE AND LOCAL PENSION PLANS

NUMBER 41, OCTOBER 2014

DO PUBLIC PENSIONS HELP RECRUIT AND RETAIN HIGH-QUALITY WORKERS?

*By Alicia H. Munnell, Jean-Pierre Aubry, and Geoffrey Sanzenbacher**

Introduction

Many state and local governments have responded to shortfalls facing their pension plans by cutting benefits. These benefit cuts – which typically affect only new employees – take many forms, ranging from increases in age and tenure requirements for benefits to reductions in cost-of-living adjustments (COLAs). These benefit reductions will reduce a component of public employment compensation that helps ensure comparability of total compensation between the private and public sectors. Furthermore, more generous pensions may help employers recruit and retain high-quality workers who have the foresight to value the far-off benefit that pensions represent. Thus, it is natural to wonder if reductions in public pension benefits will hinder states' and localities' ability to recruit and retain workers in competition with the private sector. This *brief* sheds light on this question.

The discussion is organized as follows. The first section introduces the notion that states and localities experience a "quality gap" in their recruitment and retention of workers – they recruit workers from the private sector who make less than the workers that are ultimately lost to the private sector. Will reducing pension benefits enlarge this gap? To address this question, the second section examines the possible relationship between worker quality and pension generosity. The third section presents an analysis of this relationship, which shows that for states and localities with relatively generous pensions, a reduction in benefits is associated with an increase in the quality gap. The *brief* concludes by considering the consequences of states and localities cutting pension benefits.

** Alicia H. Munnell is director of the Center for Retirement Research at Boston College (CRR) and the Peter F. Drucker Professor of Management Sciences at Boston College's Carroll School of Management. Jean-Pierre Aubry is assistant director of state and local research at the CRR. Geoffrey Sanzenbacher is a research economist at the CRR.*

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crr.bc.edu

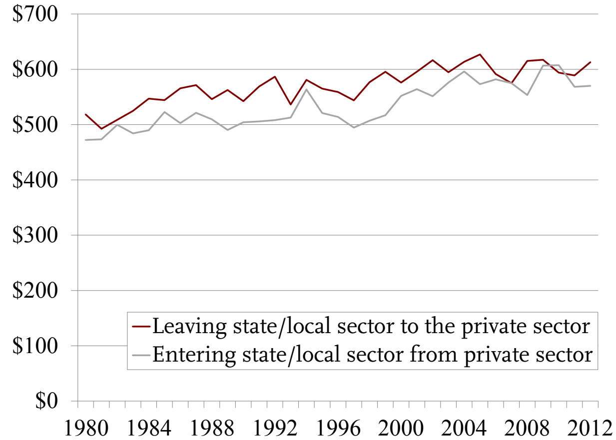
The Quality Gap

To analyze the effect of pensions on states' and localities' ability to attract and retain high-quality workers, a measure of worker quality is needed. One interesting metric proposed by Borjas (2002) is to use the private sector wage. Essentially, this approach assumes the skills demanded by the private and public sectors are similar, i.e., that a worker who can command a high private sector wage is also valuable to the public sector. The method is to: 1) obtain a sample of workers who are entering the public sector after employment in the private sector; 2) obtain a sample of workers who are leaving the public sector to gain employment in the private sector and; 3) compare the private sector wages of the two groups. If the group entering the state and local sector had lower private wages than the group leaving it, then it would seem the sector is developing a "quality gap" – it is unable to replace workers it loses to the private sector with workers of the same quality.

To estimate this gap, one needs to follow state and local workers from one period to the next. For this purpose, the *Current Population Survey* (CPS) is very useful. The CPS collects data, including sector of employment, on individuals from sampled households over the course of eight monthly observations. These interviews are in non-consecutive months, so an individual's fourth and eighth observations in the CPS occur one year apart. These interviews can be merged together to see if an individual working in the state and local sector one year was working in the private sector the next (and vice versa).[1]

Figure 1 shows the private sector wages of the two groups of interest – workers entering the state and local sector and those leaving it – for the period 1980–2012. Although the magnitude changes from year to year, workers leaving the state and local sector consistently command higher private sector wages than the workers coming into the sector do – on average 7 percent higher.[2] In other words, the state and local sector seems to have a problem retaining workers that command high private sector wages – there does appear to be a quality gap. A key question is whether this quality gap gets worse as states cut their pension benefits.

Figure 1. Real Private Sector Weekly Earnings of Full-Time Workers Entering and Leaving the State/Local Sector,[3] 1980-2012



Source: U.S. Census Bureau, *Current Population Survey Outgoing Rotation Groups,* 1979-2013.

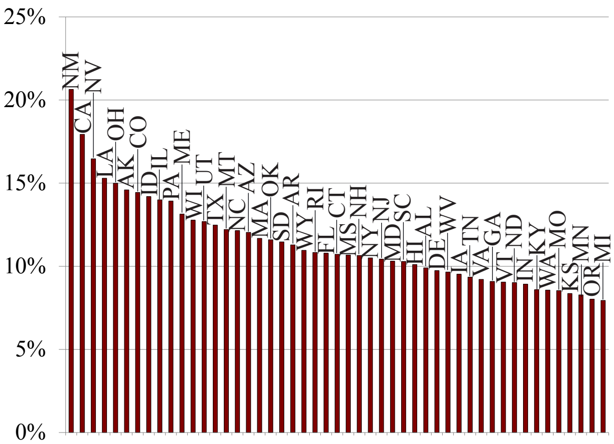
Pension Generosity and Worker Quality

Economists have hypothesized that one reason firms offer pensions is to attract forward-looking workers who value far-off pension benefits and may be more productive.[4] Several studies support this hypothesis. A 2002 analysis, using a sample of federal employees, showed that 401(k) savers had higher job ratings and promotion rates than non-savers.[5] Another study found that states with more generous teacher compensation and pensions were able to attract teachers from colleges with higher standardized test scores.[6] Both studies suggest that decreasing pension generosity could hinder states' and localities' ability to attract and retain high-quality workers, widening the gap shown in Figure 1.

To test this hypothesis, two things are required: 1) a measure of pension generosity; and 2) a change in this generosity measure to see if it impacts the quality gap. To measure pension generosity, it is useful to introduce the concept of normal cost. The normal cost is the present value of benefits that are accrued by active members in a calendar year, expressed as a share of payroll.[7] The normal cost data used in this *brief* come from the *Public Plans Database*. These data contain a plethora of information on pension plans representing over 85 percent of state and local workers.

While data are readily available on the cost of today's benefits, obtaining changes in pension generosity over time is more difficult. Even though many plans have implemented benefit cuts following the financial crisis, many of these cuts only affect new workers and have thus had a limited effect on the plan's current normal cost. In fact, the average normal cost of state and local plans was roughly constant between 2008 and 2012.[8] Instead, we turn to the variation that exists in the normal cost *across* states' and localities' pension plans, examining whether plans with more generous pensions also have smaller quality gaps. Variation in pension generosity is substantial, as is shown by the range of normal cost for a sample of statewide pension plans (see Figure 2).[9]

Figure 2. Average Normal Cost as a Share of Payroll for a Sample of Statewide Plans, 2001-2012



Note: Excludes plans that apply to specific occupations (e.g., school workers, teachers, police, firefighters, etc.) and to political subdivisions smaller than the state.
Source: *Public Plans Database* (2001-2012).

Analyzing the Relationship between Pension Generosity and the Quality Gap

To see if pension generosity is related to the quality gap, workers from the *Current Population Survey* are assigned, as closely as possible, a pension plan and that pension plan's normal cost from the *Public Plans Database*.[10] Once this step is complete, the data are "collapsed" at the plan-year level, so that each observation represents a given pension plan in a given year. Each pension-year observation contains data on the normal cost of the plan in that year as well as the average private sector wage of people leaving and entering the plan. With these data in hand, the quality gap for a given plan can be defined as the percent difference between the average wage of those leaving the state and local sector and those entering it.

$$\textit{Quality gap} = \frac{\textit{Avg. wage of leavers} - \textit{Avg. wage of enterers}}{\textit{Avg. wage of enterers}}$$

As discussed, this quality gap is typically a positive number – workers leaving the state and local sector have higher private sector wages than those entering it.

Each observation also contains the demographic characteristics (gender, education, race, marital status, age) of workers entering and leaving the plan. This information can be used to estimate "demographic gaps" that exist in the characteristics of workers who enter and leave. For example, if 50 percent of workers leaving an employer are college educated, but only 40 percent of workers entering are college educated, one would expect the education gap to increase the quality gap. By controlling for demographic gaps, it is possible to isolate the effect of pensions on the relative quality of leavers and enterers.

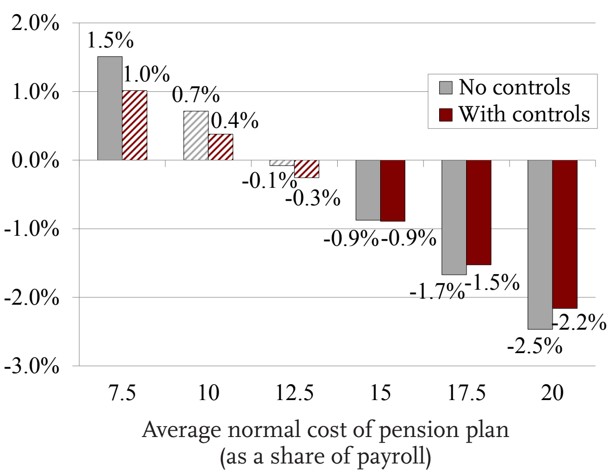
A regression analysis can be performed using these data to find the relationship between the quality gap within a pension plan and the normal cost of the pension. In this *brief,* two such regression equations are estimated: 1) includes only a measure of the average normal cost of the pension plan; and 2) adds controls for demographic gaps and for the passage of time.[11] The first regression identifies the simple relationship between normal cost and the quality gap. The second regression examines whether this relationship still exists among plans that lost and gained similar workers. For the second regression, the equation is:

Quality gap = f (normal cost, normal cost^2, demographic gaps, time)

The results of the regression can be used to estimate the relationship between a change in the normal cost and the size of the quality gap. Figure 3 shows this estimated relationship for six levels of normal cost, ranging from 7.5 percent of payroll (representing the lowest 5 percent of plans) to 20 percent of payroll (representing the highest 5 percent) and illustrates several points.[12] First, for plans with relatively generous pensions, increases in the normal cost are associated with significant decreases in the quality gap. At a normal cost of 15 percent, a 1-percentage-point increase is associated with a statistically significant 0.9-percentage-point reduction in the quality gap. Given that the quality gap averaged 5 percent between 2001 and 2012, a 0.9-percentage-point reduction represents nearly 20 percent of the gap. For more generous pensions, the relationship is even more pronounced. At an average normal cost of 20 percent, which represents the top 5 percent of all plans, a 1-percentage-point increase in the normal cost is associated with a decrease in the quality gap of 2.2 percentage points.

Second, Figure 3 shows that these results are similar with or without demographic controls. This similarity suggests the results are not being driven by plans with more generous pensions simply retaining only higher educated or older workers, who command higher private sector wages – plans have a smaller quality gap even if they gain and lose the same type of workers as a plan of average generosity.

Figure 3. Effect of a 1-Percentage-Point Increase in Normal Cost on the Quality Gap



Note: Striped bars are not statistically significant.
Sources: Authors' calculations from U.S. Census Bureau, *Current Population Survey Outgoing Rotation Groups,* 2000-2013; and *Public Plans Database* (2001-2012).

Finally, Figure 3 indicates that the relationship between normal cost and the quality gap is not linear: the relationship is positive, rather than negative, at lower levels of pension generosity. For example, at a normal cost level of 10 percent of payroll, the relationship between normal cost and the quality gap is estimated to be positive (albeit statistically insignificant). This positive relationship means, at this level, a 1-percentage-point increase in the normal cost is associated with an *increase* in the quality gap. This result runs counter to expectations and is certainly worth future research.

Conclusion

As states grapple with challenges facing their pensions, many have taken steps that reduce benefit generosity for their new employees. The analysis suggests that states and localities with relatively generous pensions should be cautious, because reductions in benefits may result in a reduction in their ability to maintain a high-quality workforce. To the extent the quality gap already exists for many of these employers, reducing pension generosity may widen the gap.

A couple of caveats are important. First, some variables that may be correlated with both the quality gap and generosity of pensions – e.g., health insurance benefits – were not included in this analysis due to data limitations. If these factors (rather than pension normal costs) drove the result, then changes in pension benefits may have more muted effects than estimated here. Second, the non-linearity in the result is intriguing, but its source unclear. Why do plans at the bottom of the generosity distribution have smaller quality gaps than plans in the middle? Will reductions in these plans have any effect on the quality gap? Future research will seek to shed light on both the causality of the main result and on its apparent non-linearity.

Endnotes

1 In practice, this merging must be conducted carefully. Appropriate merging of the CPS data involves two steps: 1) use of CPS-provided identifiers to conduct an initial merge between the fourth and eighth months' interviews; and 2) adjustment of the initial merge by removing observations that the CPS-provided identifiers indicate are the same individual but clearly are not. See Feenberg and Roth (2007) and Madrian and Lefgren (1999).

2 It is worth noting that the same is not true of workers entering and leaving the private sector – their public sector wages are almost identical whether they are coming or going.

3 Wages are normalized to year 2000 dollars. The analysis only includes workers aged 16-64 who were either: 1) working in the private sector at time *t* and the state/local sector at time *t+1* (entering state/local); or 2) working in the private sector at time *t* and the state/local sector at time *t-1* (leaving state/local). The analysis excludes workers working fewer than 35 hours per week in either year as well as workers making fewer than 90 dollars per week in either year.

4 For example, see Ippolito (1992) or Gustman, Mitchell, and Steinmeier (1994).

5 Ippolito (2002).

6 Munnell and Fraenkel (2013).

7 Although the normal cost captures both the generosity of the benefit and assumptions the state makes regarding its pension plan (e.g., return on investment, retirement age of workers, etc.), because states tend to make similar actuarial assumptions, the normal cost is a good proxy for pension generosity.

8 Munnell et al. (2013); and authors' calculations from the *Public Plans Database*.

9 For simplicity of presentation, the figure excludes plans that apply to specific occupations within a state (e.g., school workers, teachers, police, firefighters, etc.) and plans that apply to political subdivisions below the state level. Many of these plans are included in analyses discussed later in the *brief*.

10 For details on how this merge was conducted, see the Appendix.

11 Full specifications and results from these two regressions are included in the Appendix.

12 Typically, the normal cost of the pension is split between employers and employees. Earlier specifications of the model included the employer and employee normal costs separately. However, because the effects were similar regardless of who was paying the normal cost, the results presented in this *brief* include the total normal cost only.

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APPENDIX

Appendix. Merging Normal Cost onto *Current Population Survey* data

Where possible, workers were assigned the normal cost of a pension plan covering their specific occupation. This procedure was used for teachers, school workers, police and firefighters, and workers in higher education. All other workers were assigned the broadest plan applicable. Given this approach, the normal cost of a state or local worker's pension (or the pension a private sector worker could expect if moving to the state and local sector) was assigned in the following way:

For Local Workers

1. Local workers in cities with their own municipal plan for their occupation (e.g., Chicago Teachers, Denver Employees, etc.) were assigned the normal cost for that plan; then
2. Local workers in states with statewide municipal plans for their occupation (e.g., Colorado Municipal, Maine Local, etc.) were assigned the normal cost for that plan; then
3. Remaining local workers were assigned the relevant statewide plan for their occupation.

For State Workers

State workers were assigned the relevant statewide plan for their occupation (e.g., Delaware State Employees, Georgia Teachers, etc.).

Table A1. Full Results for Regression of Quality Gap on Indicated Variables

Variable	Specification (1)	(2)
Total Normal Cost	.03894***	.02918**
	(0.0136)	(0.0119)
Total Normal Cost Squared	-.00159***	-.00127***
	(0.0005)	(0.0005)
Male Gap		.00301***
		(0.0005)
Black Gap		-0.000067
		(0.0008)
Married Gap		0.00034
		(0.0006)
College Gap		.00534***
		(0.0005)
Age Gap		.00888***
		(0.0021)
Age Gap Squared		.00061***
		(0.0002)
Year		-.04233**
		(0.0185)
Year Squared		.00297**
		(0.0013)
Number of plan-years	765	765
R-squared	0.0062	0.2344
F-statistic	5.41	19.66

Note: Robust standard errors in parentheses. Coefficients are significant at the 10-percent (*), 5-percent (**), or 1-percent (***) level. Includes only plans and years that had at least one person leaving for the private sector and one person entering from the private sector.
Source: Authors' calculations from U.S. Census Bureau, *Current Population Survey Outgoing Rotation Groups,* 2000-2013; and *Public Plans Database* (2001-2012).

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The mission of the Center for Retirement Research at Boston College is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception in 1998, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

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