NORTH Dakota | Teachers' Fund For Retirement
Be Legendary. RETIREMENT & INVESTMENT

ND TFFR Board Meeting
Thursday, November 21, 2024, 1:00 p.m.
WSI Board Room (In Person),
1600 E Century Ave, Bismarck ND
Click here to join the meeting

AGENDA

I. **CALL TO ORDER AND ACCEPTANCE OF AGENDA** ***(Board Action)***
   A. Pledge of Allegiance
   B. Conflict of Interest Disclosure
   C. Executive Summary

II. **ACCEPTANCE OF MINUTES (September 26, 2024)** ***(Board Action)***

III. **EDUCATION (30 minutes)** ***(Information)***
   A. Experience Study - GRS

IV. **GOVERNANCE (90 minutes)**
   A. 2024 Actuarial Valuation Report *(Board Action)* - GRS
   B. Annual Strategic Communications Plan Update *(Board Action)* – Ms. Mudder
   C. Governance & Policy Review Committee Update *(Information)* – Mr. Mickelson, Mr. Roberts
   D. Audit Committee Update *(Information)* – Treasurer Beadle, Ms. Thorsen
   E. Employee Benefits Programs Committee Update *(Information)* – Ms. Murtha
   F. Pioneer Project Update *(Information)* – Mr. Roberts

(Break)

V. **REPORTS (60 minutes)** ***(Board Action)***
   A. Quarterly Investment Report – Mr. Posch
   B. Annual Budget and Expense Report – Mr. Skor
   C. Quarterly Internal Audit Report – Ms. Thorsen
   D. Annual TFFR Ends Report – Mr. Roberts
   E. Executive Limitations/Staff Relations Report – Ms. Murtha

VI. **CONSENT AGENDA –** Disability Application[1] ***(Board Action)***

VII. **OTHER BUSINESS**
   A. Board Reading Materials – Material References Included
   B. Next Meetings:
      1. TFFR Board Meeting - Thursday, January 23, 2025, at 1:00 p.m.

VIII. **ADJOURNMENT**

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[1] Possible Executive Session to discuss confidential member information under N.D.C.C. 15-39.1-30.

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

EXECUTIVE SUMMARY
TFFR Regular Meeting
November 21, 2024 – 1:00pm CT

I. **Agenda:** The **November Board Meeting will be held in the Conference Room at the WSI Building to accommodate in person attendance, however, a link will also be provided so that Board members and other attendees may join via video conference.**

- Attendees are invited to join the Board President in the Pledge of Allegiance.
- Conflict of Interest Disclosure: For best practice board members are asked to review the agenda and note any potential conflicts of interest for an item in advance of or at the start of the meeting. Conflicts can be documented using the following form: Conflict of Interest Disclosure Form 8 17 2022 .pdf (nd.gov).

II. **Minutes (Board Action):** The September 26, 2024, Board meeting minutes are included for review and approval.

III. **EDUCATION**

A. **Experience Study (Information):** A representative from GRS will provide board education on the experience study process.

IV. **GOVERNANCE**

A. **2024 Actuarial Valuation Report (Board Action):** A representative from GRS will present the results of the annual valuation report for board acceptance.

B. **Annual Strategic Communications Plan Update (Board Action):** Ms. Mudder will present the strategic communications plan for board acceptance.

C. **GPR Committee Update (Information):** Committee Chair Mickelson and Mr. Roberts will report on committee activities.

D. **Audit Committee Update (Information):** Committee Chair Treasurer Beadle and Ms. Thorsen will update the board on current audit committee activities.

E. **Employee Benefits Programs Committee Update (Information):** Ms. Murtha will update the board on current audit committee activities.

F. **Pioneer Project Update (Information):** Mr. Roberts will provide the board with an update on the current status of the Pioneer project.

V. **Reports (Board Action):** Staff will provide reports on quarterly investment performance, annual budget and expense report, quarterly internal audit activities, annual TFFR Ends, and executive limitations/staff relations.

Adjournment.

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
SEPTEMBER 26, 2024, BOARD MEETING

BOARD MEMBERS PRESENT:	Dr. Rob Lech, President Mike Burton, Vice President Kirsten Baesler, State Supt. DPI Thomas Beadle, State Treasurer Scott Evanoff, Trustee Cody Mickelson, Trustee Alexis Rasset, Trustee
STAFF PRESENT:	Scott Anderson, CIO Jayme Heick, Retirement Spec. Rachel Kmetz, Fiscal/Investment Operations Mgr. Missy Kopp, Exec. Assistant Sarah Mudder, Communications/Outreach Dir. Jan Murtha, Exec. Director Matt Posch, Portfolio Manager Chad Roberts, DED/CRO Ryan Skor, CFO/COO Dottie Thorsen, Internal Auditor Tami Volkert, Retirement Compliance Spec. Denise Weeks, Retirement Program Mgr.
OTHERS PRESENT:	Dean DePountis, Atty. General's Office Michele Blumhagen, NDIT Members of the Public

CALL TO ORDER:

Dr. Lech, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the meeting to order at 1:00 p.m. on Thursday, September 26, 2024. The meeting was held in the WSI Board Room, 1600 E Century Avenue, Bismarck.

THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM: TREASURER BEADLE, MR. BURTON, MR. EVANOFF, DR. LECH, MR. MICKELSON, AND MS. RASSET.

ACCEPTANCE OF AGENDA:

The Board considered the agenda for the September 26, 2024, meeting.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY MR. BURTON AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA AS DISTRIBUTED.

AYES: TREASURER BEADLE, MR. BURTON, MS. RASSET, MR. MICKELSON, MR. WILLGOHS, MR. EVANOFF, AND PRES. LECH
NAYS: NONE
ABSENT: SUPT. BAESLER
MOTION CARRIED

Ms. Murtha introduced the new TFFR Board Member, Alexis Rasset.

ACCEPTANCE OF MINUTES:

The Board considered the minutes for the July 25, 2024, TFFR Board meeting.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY MR. EVANOFF AND CARRIED BY A VOICE VOTE TO ACCEPT THE JULY 25, 2024, MINUTES AS DISTRIBUTED.

AYES: MR. MICKELSON, MS. RASSET, MR. EVANOFF, TREASURER BEADLE, MR. BURTON, AND PRES. LECH
NAYS: NONE
ABSENT: SUPT. BAESLER
MOTION CARRIED

Annual Internal Audit Activities Report:

Ms. Thorsen provided the Annual Audit Committee Activities report for the fiscal year (FY) ended June 30, 2024. The report provided an overview of all IA activities including the IA Maturity Development Process Review and the TFFR Pioneer Project. Ms. Thorsen reviewed completed audits and administrative activities of the IA staff. Board discussion followed.

EDUCATION:

AI State Policy and Practices:

Ms. Kim Weis, NDIT, provided education on the state's policies and use of artificial intelligence (AI) to enhance government services. Ms. Weis highlighted that AI tools, such as chatbots and large language models, can aid in tasks like coding assistance, program development, and data search, offering responses in natural language. However, she emphasized the need for users to verify AI-generated information and avoid inputting sensitive data, especially when using non-secure, free tools. Ms. Weis discussed the project undertaken by NDIT to pilot a ND chat bot. This project has underscored the need for clean, well-organized data across state agencies to ensure that AI responses are accurate. Board discussion followed.

Supt. Baesler joined the meeting at 1:20 p.m.

AI Application in Retirement Services:

Mr. Roberts provided an overview of the uses of AI in pension administration. AI can be used for data processing and management, communications, investment optimization and compliance monitoring. AI can provide automation of routine tasks, enhanced decision making, fraud detection and predictive analytics. Mr. Roberts discussed the risks and risk mitigation for the use of AI. Board discussion followed.

GOVERNANCE:

Governance & Policy Review (GPR) Committee Update:

Mr. Mickelson provided an update from the September 10, 2024, TFFR GPR Committee meeting. The Committee approved a workplan for the upcoming fiscal year and did a final review of the changes in the governance manual ahead of the second reading and final adoption of the changes to the manual. Mr. Roberts reviewed one new change the GPR made to the policy that addresses SIB membership. Board discussion followed.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY MS. RASSET AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE SECOND READING AND FINAL ADOPTION OF TFFR GOVERNANCE MANUAL POLICIES: SECTION 1, SUBSECTIONS A, B, C, D, E, G, H, J, K, M, O, Q, R AND SECTION 2, SUBSECTIONS D, E, F, AND G.

AYES: TREASURER BEADLE, SUPT. BAESLER, MS. RASSET, MR. EVANOFF, MR. BURTON, MR. MICKELSON, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

<u>Legislative Planning</u>:

Ms. Murtha reviewed proposed legislation position recommendations from the GPR Committee and retirement education initiative planning updates. A bill has been submitted to the Employee Benefits Programs Committee (EBPC) by a legislator that would authorize a one-time payment from a general fund transfer to TFFR retirees. The amount that comes from the general fund would come from state employee compensation increases. The GPR Committee concurred that this would be positive for retirees, and it does not have an actuarial impact on the TFFR fund. Concerns were expressed about how the calculation would be done and also the impact to state employees.

Ms. Murtha provided a timeline, factors, and current timing for the retirement education plan initiative for TFFR members. Pres. Lech participated in the Teacher Retention and Recruitment Taskforce which has completed it recommendations. The report is not yet public, but Pres. Lech provided some highlights from the recommendations. Board discussion followed.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY MS. RASSET TO TAKE A POSITION OF SUPPORT OF A ONE TIME PAYMENT TO RETIRED TFFR MEMBERS AND TAKE A NEUTRAL POSITION ON THE AMOUNT AND THAT THE DOLLARS WOULD COME FROM STATE EMPLOYEE COMPENSATION.

AYES: MS. RASSET, MR. BURTON, MR. MICKELSON, SUPT. BAESLER, MR. EVANOFF, TREASURER BEADLE, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

<u>Audit Committee Update</u>:

Treasurer Beadle provided an update from the August 14, 2024, meeting. The Committee reviewed and approved the year-end audit activities and audit charters, which had been developed in consultation with Weaver. Weaver also provided updates on the internal audit maturity process, focusing on enhancing staff capabilities for effective auditing. A key discussion point was the current staffing limitations in the internal audit team, which consists of only two FTEs. The committee is considering using external consulting to address these gaps and may propose additional staffing in the next legislative session to strengthen internal audit capacity. Board discussion followed.

Pioneer Project Update:

Mr. Roberts provided an update on the Pioneer Project. Staff completed phase three of user acceptance testing. The vendors that provide employer software have finalized their integration designs. Phase four began in September and will continue for the next few weeks. Staff are working with PERS to complete an interface with their system for the processing of dual members. Data migration is nearly complete. Testing of scanning functions is underway, and no issues have been found. Staff are planning the cutover tasks including communications with employers. Some savings was found that will offset the additional hosting cost for the delayed launch date and the return-to-work calculator. The vendor has been ambiguous about whether they can deliver certain functional modules of the project by the planned launch date. Discussions are ongoing. Board discussion followed.

The Board recessed at 2:56 p.m. and reconvened at 3:10 p.m.

REPORTS:

Annual/Quarterly Investment Report:

Mr. Posch provided the investment performance update as of June 30, 2024. Over the past decade, the fund's policy allocation returned 6.8%, surpassing both a 60/40 equity-bond passive benchmark (5.4%) and the fund's policy benchmark (6.3%). This outperformance equates to a substantial $491 million benefit over 10 years. The fund's allocations closely match target weights across asset classes. The one-year total return stands at 8.1%, slightly underperforming the policy benchmark of 8.4%. This gap is largely due to underperformance in the real estate sector. Compared to similar pension funds, the fund's recent quarterly performance was around the median. However, due to the real estate allocation and underperformance in small caps, the one-year performance fell below the bottom quartile. Over the long term, however, the fund's 10-year returns remain around or above the median. Board discussion followed.

Annual Technology Report:

Ms. Blumhagen provided an update on information technology (IT) activities for RIO over the past year. The review included agency collaboration activities, large IT project updates, and security incidents statewide and training activities completed by RIO staff. Board discussion followed.

Quarterly TFFR Ends Report:

Mr. Roberts provided the TFFR Ends Report for the quarter ended June 30, 2024. The update included Pioneer Project activities, staff training in Power BI, and communication with business partners about the pension administration system. Board discussion followed.

Executive Limitations/Staff Relations:

Ms. Murtha provided the Executive Limitations/Staff Relations Report. Ms. Murtha reviewed the status of current staffing activities and current projects and initiatives. RIO staff attended an all-staff training on Monday September 23, 2024, which focused on building engagement and addressing work-life balance to prevent burnout, as identified in the strategic planning process. The team received "Working Genius" training, which helped them understand how to structure meetings more effectively and the need to identify the purpose and goals of those meetings to reduce frustration. Additionally, the team participated in creating self-care kits, funded by a wellness grant from PERS. Ms. Murtha provided an update on the Attorney General opinion from earlier this year. The request is still pending; however, it has sparked further inquiries from some legislators, prompting outreach to RIO and the Governor's Office. Lt. Gov. Miller and staff from the Governor's Office have been instrumental in coordinating discussions. Ms. Murtha and Mr. Roberts will attend the National Council on Teacher Retirement (NCTR) Annual Conference in October. Ms. Murtha has agreed to moderate a panel on securities litigation at the conference. Board discussion followed.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. BURTON AND CARRIED BY A VOICE VOTE TO ACCEPT THE ANNUAL/QUARTERLY INVESTMENT, ANNUAL INTERNAL AUDIT, ANNUAL TECHNOLOGY, QUARTERLY TFFR ENDS, QUARTERLY OUTREACH, AND THE EXECUTIVE LIMITATIONS/STAFF RELATIONS REPORTS.

AYES: MR. EVANOFF, MR. MICKELSON, MS. RASSET, TREASURER BEADLE, MR. BURTON, AND PRES. LECH
NAYS: NONE
ABSENT: SUPT. BAESLER
MOTION CARRIED

CONSENT AGENDA:

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO APPROVE DISABILITY APPLICATION 2024-7D.

AYES: MR. BURTON, MS. RASSET, MR. EVANOFF, TREASURER BEADLE, MR. MICKELSON, AND PRES. LECH
NAYS: NONE
ABSENT: SUPT. BAESLER
MOTION CARRIED

ADJOURNMENT:

With no further business to come before the Board, Mr. Burton adjourned the meeting at 4:26 p.m.

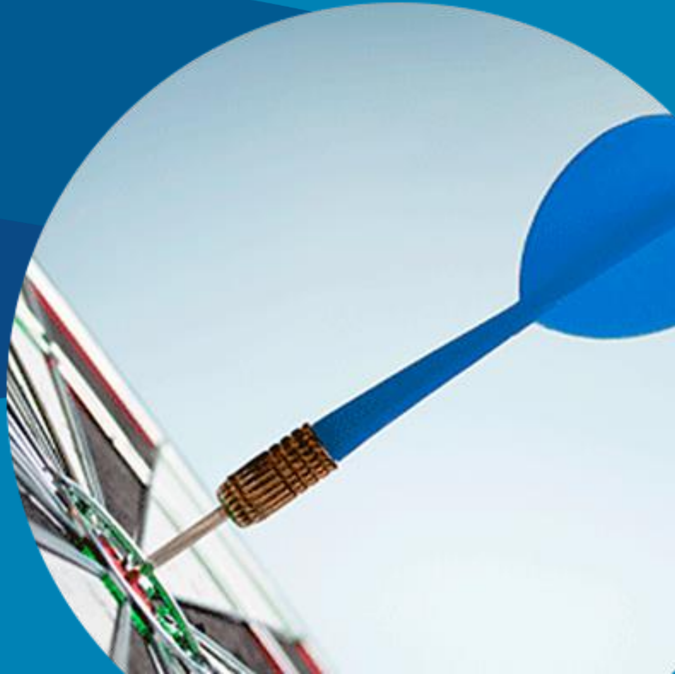
Prepared by,

Missy Kopp, Assistant to the Board

Educational Intro and Actuarial Valuation as of July 1, 2024

November 21, 2024

Paul Wood, ASA, FCA, MAAA
Krysti Kiesel, ASA, MAAA



Today

- Educational Intro: Experience Study Process and Key Actuarial Concepts and Terms
- FY 2024 Experience and Key July 1, 2024 Results
- Looking Forward – Plan Outlook

EDUCATIONAL INTRO: EXPERIENCE STUDY PROCESS

Purpose of Experience Study

- Assumptions should occasionally change to reflect
  - New information and changing knowledge
  - Changing patterns of retirements, terminations, mortality, etc.
- Experience study is a regularly scheduled review of the assumptions and methods
  - Generally recommend every 3-5 years
  - Five years since last study
- General process for setting assumptions and methods
  - Actuary makes recommendations
  - Board considers actuary's recommendation and makes the final decision for the system

Inside the Actuarial Valuation: Projecting the Liability for Each Member

What is the probability the member reaches retirement? (Termination assumption)

When will the member retire? (Retirement assumption)

How much will the benefit be? (Salary increase assumption)

How long will the benefit be paid? (Mortality assumption)

Hired at age 30

Retire with annual benefit

Receive benefit for remaining lifetime

What investment earnings will be available to help pay the benefits?

What overall payroll will be available to provide contributions?

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How assumptions factor in…

- Over time, the true <u>cost</u> of benefits will be borne out in actual experience
  - Ultimate benefits paid are NOT affected by actuarial assumptions or methods
  - Determined by <u>actual</u> participant behavior (termination, retirement), plan provisions, and <u>actual</u> investment returns
- Assumptions help us develop a reasonable starting point for decision making today

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Selection of Assumptions

What Are They?

Economic	Demographic
• Investment Return • Payroll Growth Rate • Promotional/Step Pay Increases • Population Growth Rate (Usually, a constant population size is assumed)	• Retirement Rates • Disability • Turnover • Mortality

Who Selects Them?

Economic	Demographic
• Board • Other Advisors	• Board (usually based on experience study)

Experience Study Process

- Compare actual experience to current actuarial assumptions and recommend changes to assumptions if necessary to better align with future expectations
- Reviewed past experience over a given timeframe
  - Identified how many members retired, terminated, became disabled, or died, including their age/service
  - Identified salary increases received by active members
  - Greater emphasis on forward-looking expectations for economic assumptions

Experience Study Timing

- It's already begun!
  - Currently working on analyzing your plan experience over last five years
- GRS will present additional education and results at winter/spring meetings
- Could do in one long session or break into education and results
- Adopt assumptions in time for use in July 1, 2025 valuation

EDUCATIONAL INTRO (CONT'D): KEY ACTUARIAL CONCEPTS AND TERMS

Who Invited the Actuary?

- SUCCESS is always having money on hand to pay every benefit promised
  - No assumptions, no projections…just the facts
- The LIMITATION is that there is heavy competition for limited resources and a goal of equity across generations of stakeholders
- The CHALLENGE is that we will not know if we were successful until the last benefit is paid, which actually will never happen
  - There are always new members being added, members aging through the career and retiring, etc.
  - So, you always find yourself in the middle of the race
  - How do we know we are on the right track?
- ACTUARIES:
  - Determine/access the appropriate amount and pattern of contribution
  - Help stakeholders monitor the fund’s progress towards success
  - Provide advice on how to improve sustainability

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What is a Secure Retirement?

- Secure:
  - *not subject to threat; certain to remain or continue safe and unharmed*
  - <u>*feeling safe, stable, and free from fear or anxiety*</u>

Who is the Audience?

- Members
- Decision makers
  - Board, Legislature
- Outside advanced users
  - Other actuaries, bond raters, financial economists, etc.

Basic Retirement Funding Equation

C + I = B + E

Contributions	Investment Income	Benefits	Expenses
• Funding Policy	• Investment Strategy	• Plan Design	• Administrative Policy

"Money In = Money Out"

Defined Benefit Plan

- NDTFFR is a Defined Benefit Plan
  - The retirement benefit is based on a pre-determined formula: thus “defined”

- Based on C+I=B+E, if the B is “defined” and the I is uncertain, then the C has to also be uncertain
  - Future contributions will depend on whether assumptions are met

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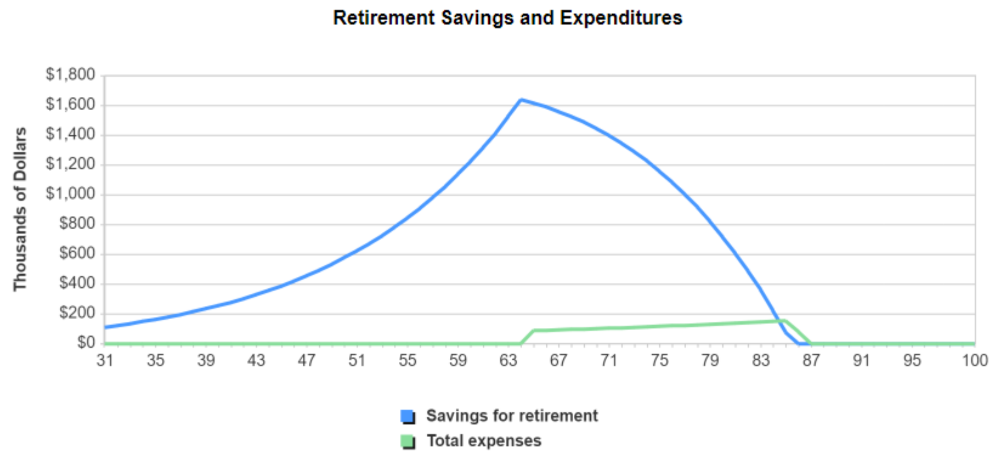
Accrued Liabilities

- Consider a simple retirement planning calculator for an individual
- The blue line represents the target asset level at each age
- For NDTFFR, the annual valuation determines what that optimal, <u>target</u> value of assets is for every member in the pension plan
- The <u>Actuarial Accrued Liability</u> is the total of all those individual target asset levels, and thus becomes the target level of assets for the Plan as a whole

Retirement savings runs out at age 86. This assumes annual retirement expenses of $88,230 which is 90% of your last year's income of $98,034.



Normal Cost

- An optimal funding strategy has the growth in the assets keep up with the growth in the liabilities
  - When a member retires, all of the monies needed to provide the benefits for that member have been accumulated
- The Normal Cost is the cost of the new benefit being earned
  - The cost of accruing that year's benefit associated with a year of service

Unfunded Accrued Liabilities

- If the actuarially accrued liability (AAL) is the target value of assets, then the Unfunded Actuarial Accrued Liability (UAAL) is the difference between the target value of assets and the actual value of assets
- The Funded Ratio is the actual value of assets as a percentage of the target value of assets

($ in millions)	June 30, 2023
AAL (Target Value)	$25,437
Assets (Actual Value)	$17,058
UAAL	$8,379
Funded Ratio	67.1%

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Actuarially Determined Contribution

- It is the sum of:
  1. The normal cost for the year and
  2. The amortization payment of the UAAL
  3. Sometimes expenses
- Another way to look at it:
  - The contribution for the current year

    plus

  - The contribution to make up any shortfall that may have occurred due to past experience or plan changes
- For NDTFFR, meant to serve as a metric to which we can compare the statutory contribution

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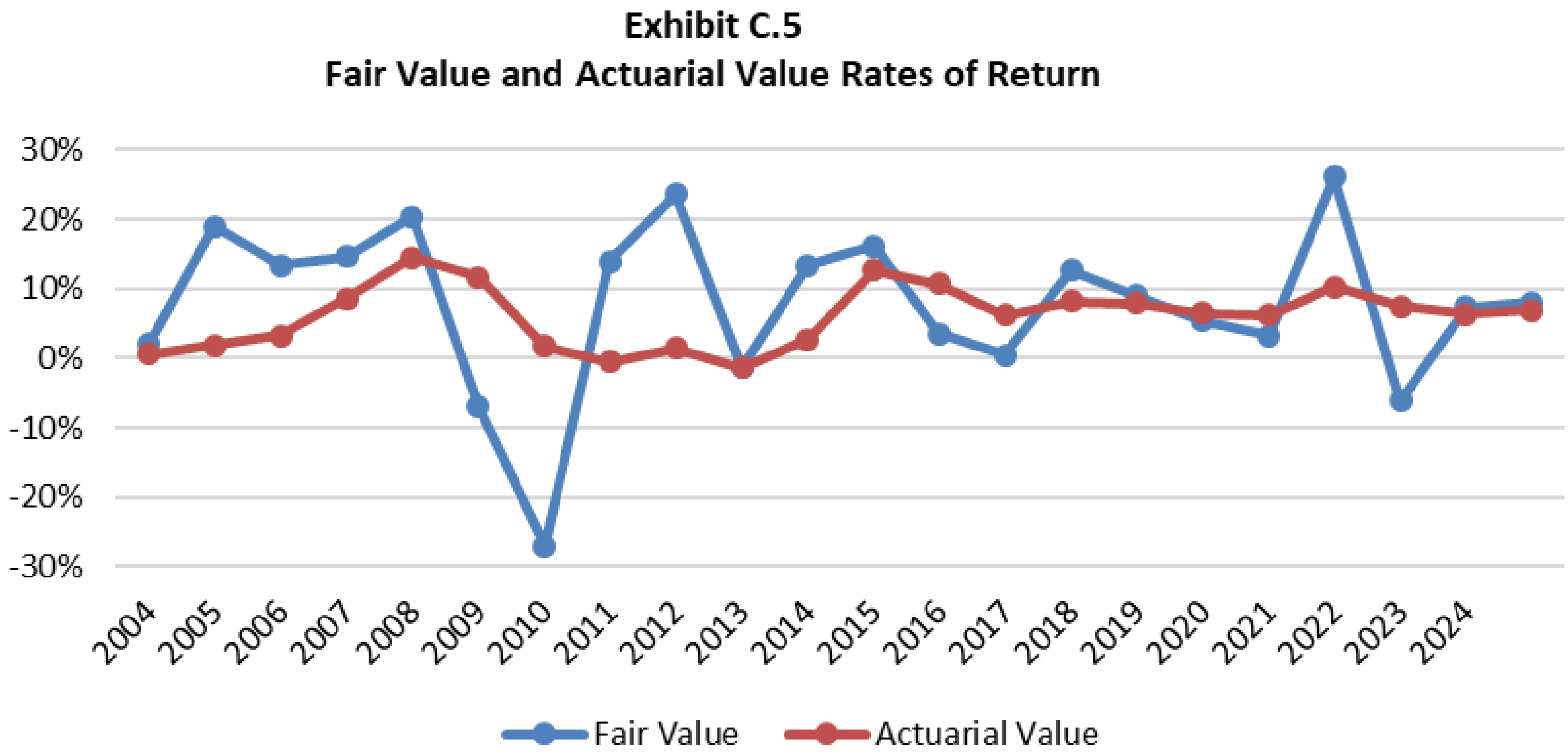
FY 2024 EXPERIENCE AND KEY JULY 1, 2024 RESULTS

Key Factors in FY 2024 Experience

- Asset experience
  - Fair value return exceeded assumption
  - Overall slightly adverse experience
    - on smoothed results
    - from prior deferred losses
  - Biggest impact item
  - Negatively impacts funded ratio, UAAL, ADC, funding period
    - Basically everything
- Salary experience
  - increased more than expected
    - both individual salary and total payroll
  - Impacts different key metrics differently

Historical Returns and Impact of Smoothing



- Market value **7.9%** (on target)
- Actuarial value **6.9%** (actuarial loss, due to recognition of prior year outstanding losses)

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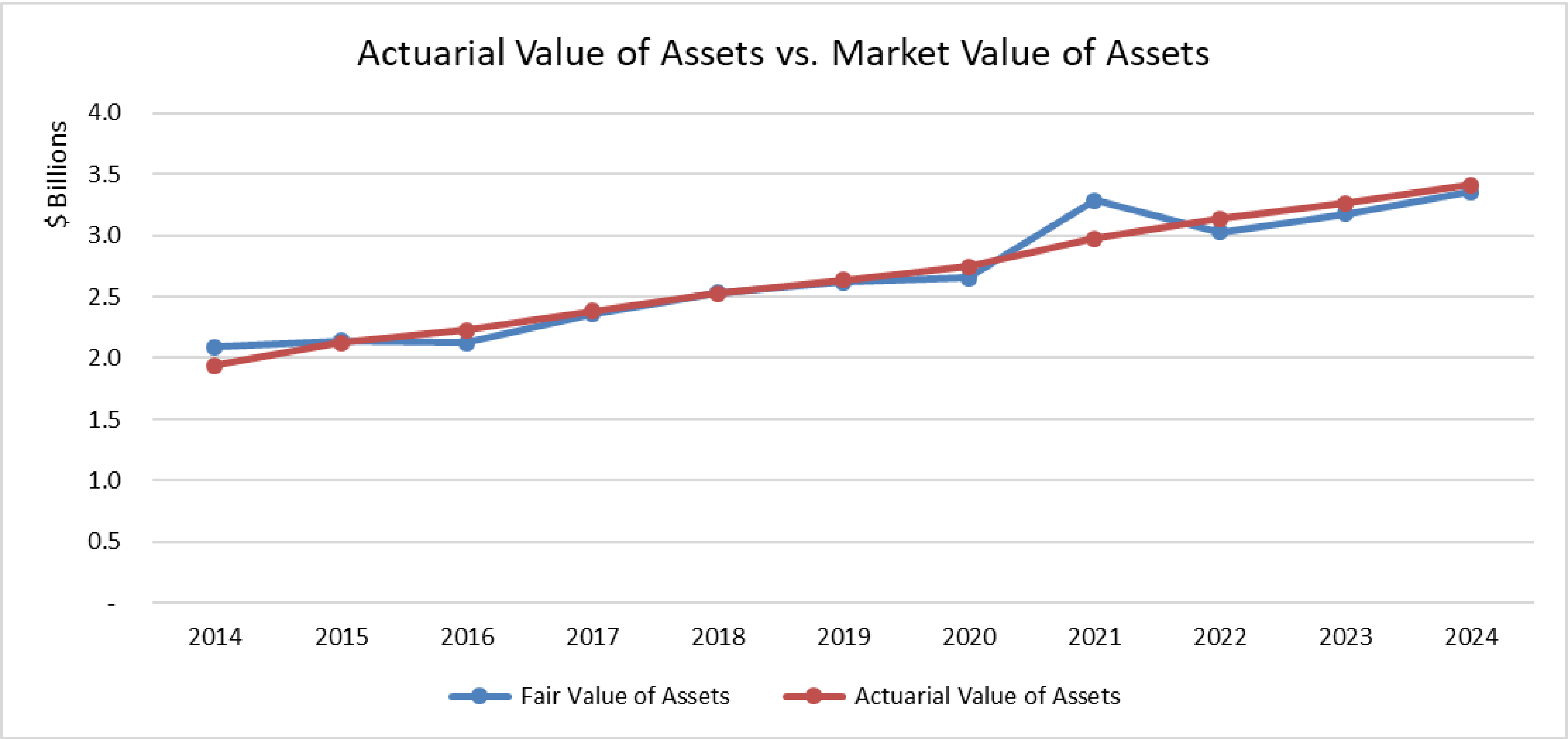
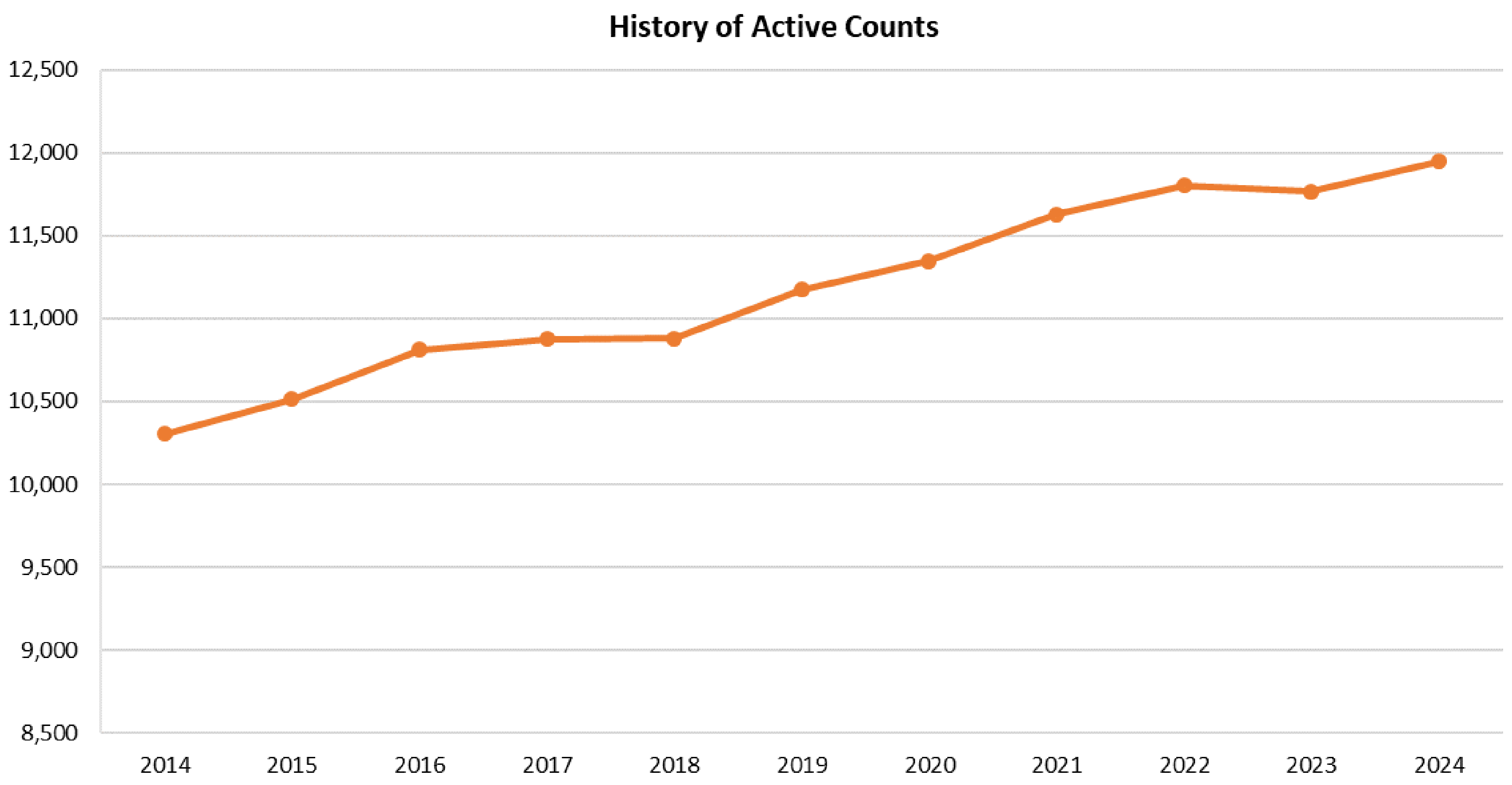
Historical Asset Values and Impact of Smoothing



Slight Population Increase



Total Payroll Growth More Than Expected

- Two sources
  - Pay increases more than expected for continuing actives
    - Primary source
    - Liability losses (projected benefits more) BUT
    - More Contributory Payroll to spread Unfunded Liability
  - Increased new hire replacement <u>decreases</u> ADC
    - Shared burden shared across more payroll
- Total combined impact
  - salary losses (*increase*) + more contributory payroll (*decrease*)
  - decrease ADC by 0.40%

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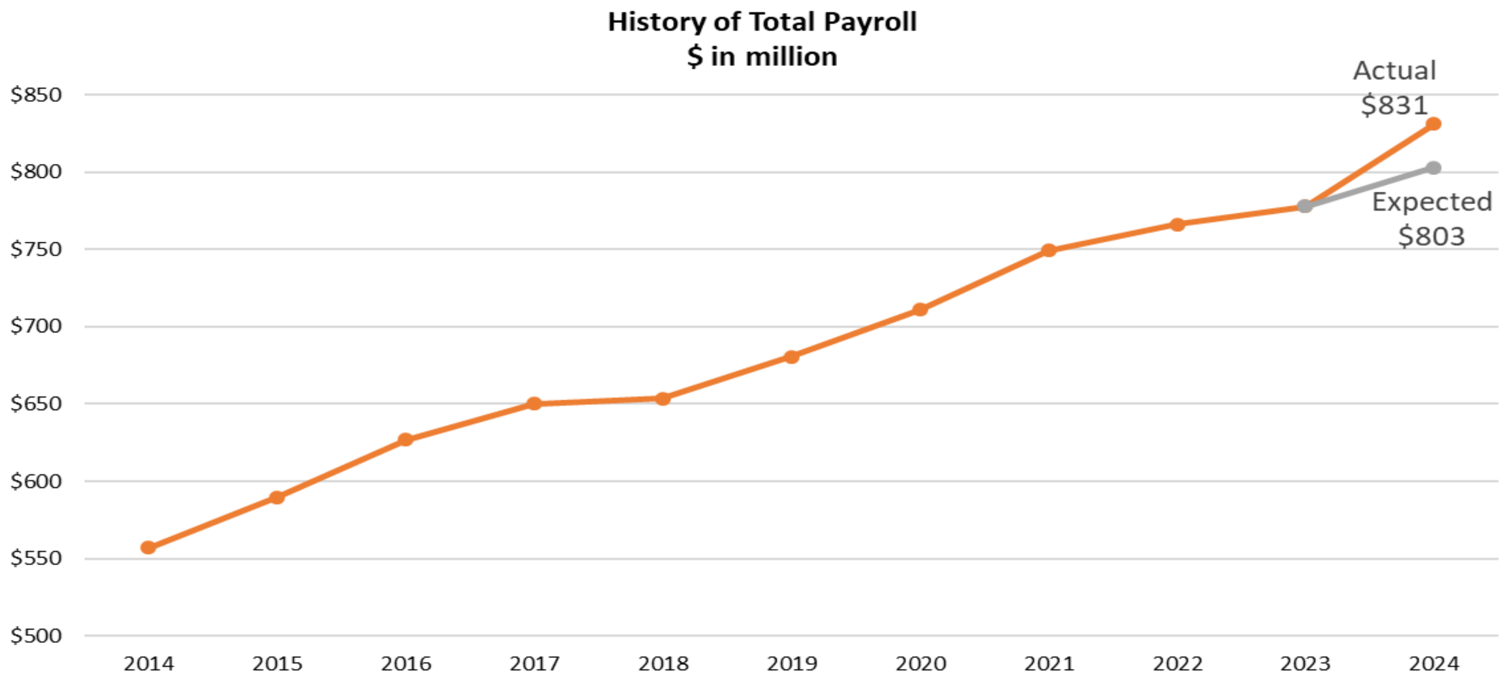
Total Payroll Growth More Than Expected

- Total payroll expected to grow 3.25%
  - *As are calculated amortization payments*
- Actually grew 6.9%



Key Results – Static

$'s in Billions

- Slight improvement but less then expected

	7/1/2024		7/1/2023	
Actuarial Accrued Liability	$	4.76	$	4.58
Actuarial Value of Assets (AVA)		3.41		3.26
Unfunded Liability (AVA-basis)		1.35		1.32
Funded Ratio (AVA-basis)		71.6%		71.2%
Actuarial Accrued Liability	$	4.76	$	4.58
Fair Value of Assets (FVA)		3.35		3.17
Unfunded Liability (FVA-basis)		1.41		1.40
Funded Ratio (FVA-basis)		70.4%		69.3%

Key results – Forward Looking

% of Pay

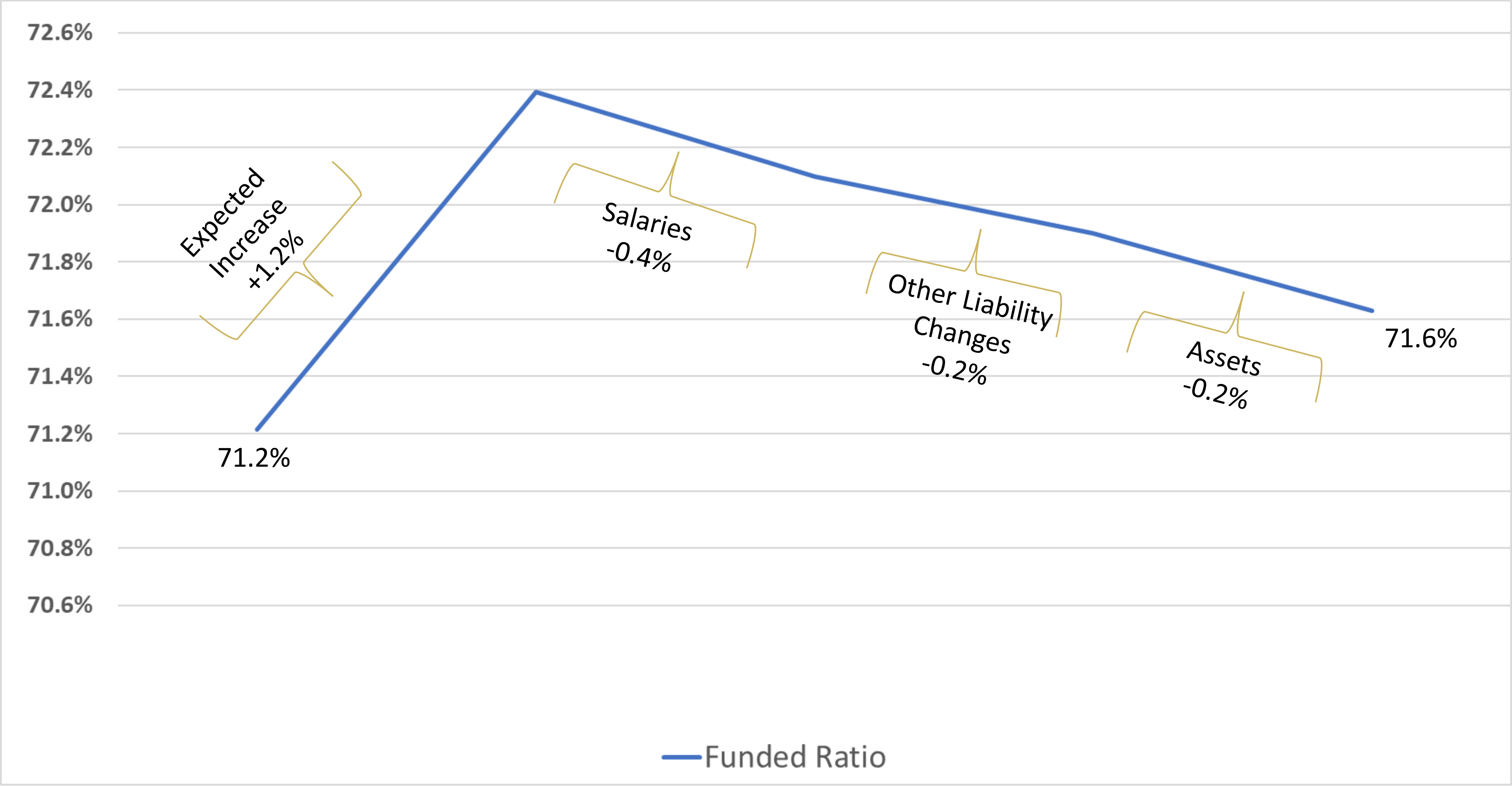
- Payroll/population growth means we're still on track for funding objectives

	7/1/2024	7/1/2023
Actuarially Determined Contribution (ADC)	24.21%	24.25%
Employee Contribution Rate	11.75%	11.75%
Net Employer ADC	12.46%	12.50%
Actual Employer Contribution Rate	12.75%	12.75%
Contribution Shortfall/(Surplus)	-0.29%	-0.25%
Funding Period	19 years	20 years

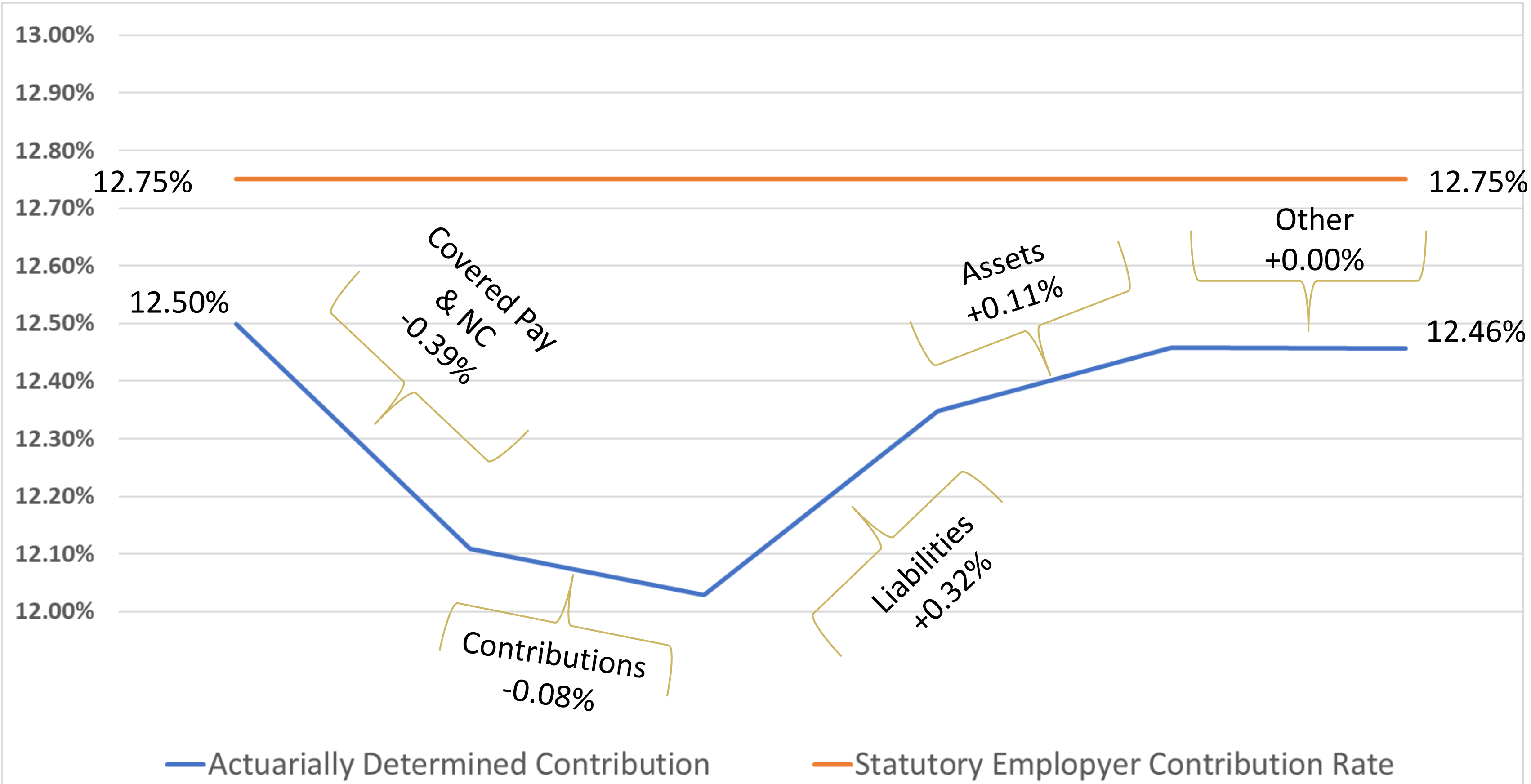
Change in UAAL Since Prior Valuation

Liability Change Detail:
Salary Increases: +$19 million
New Members and Rehire: +$9 million
Other: +$9 million

Change in Funded Ratio Since Prior Valuation



Change in ADC Since Prior Valuation



LOOKING FORWARD

If All Goes As Planned
Long-term unchanged from last year

Deterministic Projection of the Unfunded Liability
$ in Millions

As of July 1, (a)	Payroll For Next FY (b)	Contribution as % of Payroll (c)	Normal Cost and Admin as % of Payroll (d)	Net Amortization [c - d] * b (e)	UAAL BOY (f)	Interest (g)	Net Principal Contribution e - g (h)	Funding Period (i)
2024	$879	24.50%	12.68%	$104	$1,350	$94	$10	19
2025	908	24.50%	12.67%	107	1,340	93	14	18
2026	937	24.50%	12.66%	111	1,326	92	19	17
2027	968	24.50%	12.66%	115	1,307	91	24	16
2028	999	24.50%	12.65%	118	1,283	89	30	15
2029	1,032	24.50%	12.64%	122	1,254	87	36	14
2030	1,065	24.50%	12.64%	126	1,218	84	43	13
2031	1,100	24.50%	12.63%	131	1,175	81	50	12
2032	1,136	24.50%	12.63%	135	1,126	77	58	11
2033	1,173	24.50%	12.63%	139	1,068	72	67	10
2034	1,211	24.50%	12.62%	144	1,001	67	76	9
2035	1,250	24.50%	12.62%	149	924	62	87	8
2036	1,291	24.50%	12.61%	153	838	55	98	7
2037	1,333	24.50%	12.61%	158	739	48	110	6
2038	1,376	24.50%	12.61%	164	629	40	124	5
2039	1,421	24.50%	12.60%	169	505	31	138	4
2040	1,467	24.50%	12.60%	175	367	20	154	3
2041	1,514	24.50%	12.59%	180	212	9	171	2
2042	1,564	24.50%	12.59%	186	41	(4)	190	1
2043	1,614	15.50%	12.59%	47	(149)	(12)	59	-

Assumes Actuarial Value of Assets earns 7.25% and all assumptions are met.

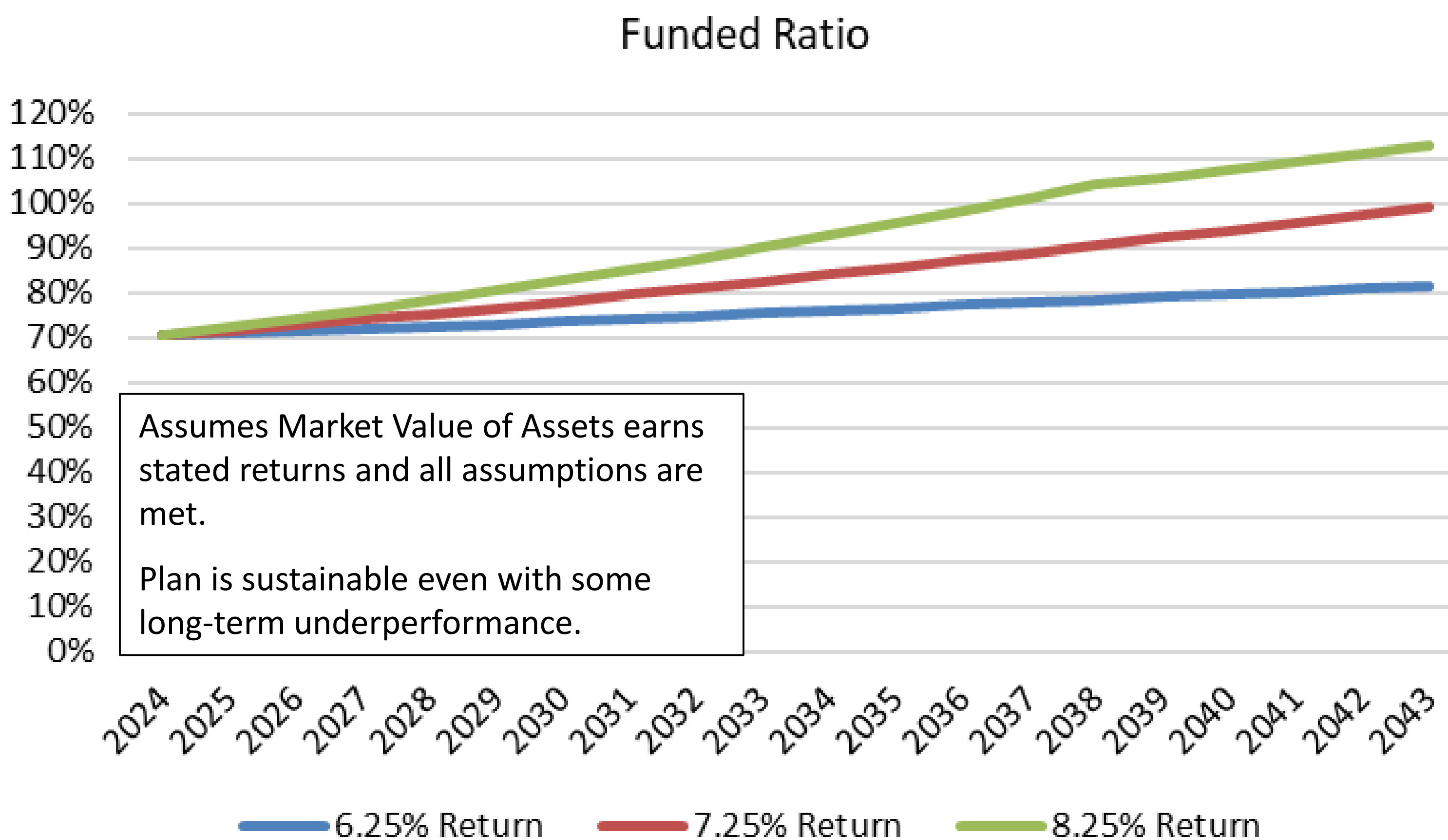
Short Term Sensitivity Analysis

FY 2024 Return	24%	16%	7.25%	0%	-7.25%	-16%	-24%
Employer ADC	11.37%	11.83%	12.32%	12.74%	13.15%	13.65%	14.10%

- There is an expectation that with a 0% return in FY 2025, the ADC would continue to be less than the current statutory contribution rate of 12.75%
  - Any less and expected to breech threshold

GRS

Long Term Projections



Summary

- TFFR statutory contributions still meeting Board funding policy objectives
  - Full funding expected in 19 years
- Slim margins
- In addition to the usual (investment return), will be keeping close eye on active population (counts and payroll growth) to make sure reliance on future payroll remains reasonable

Disclaimers

- This presentation is intended to be used in conjunction with the actuarial valuation report issued on October . This presentation should not be relied on for any purpose other than the purpose described in the valuation report.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.

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MEMORANDUM

TO: TFFR Board of Trustees

FROM: Sarah Mudder, communications and outreach director

DATE: Nov. 21, 2024

RE: Strategic Communications Plan Update

The State Investment Board approved the Retirement and Investment Office's Strategic Communications Plan in November 2023 that focused on four main goals. The following is a report of progress to date.

Goal 1: Build Brand Awareness.

Increase stakeholder knowledge of RIO and the services it provides to its investment and pension fund customers.

Objective 1: Improved awareness of agency's role as the SIB and TFFR program coordinator.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Consistently identify the agency's role as the administrative office for the SIB and TFFR programs in agency communications (i.e., letters, brochures, reports, etc.).	High	Communications director and admin support	Officewide adoption and usage	Complete with ongoing monitoring by the communications director and admin support.
Establish communication standards to address inconsistent branding, i.e., standardize email signatures, PowerPoint templates, etc.	High	Communications director	Officewide adoption and usage	Complete with ongoing monitoring by the communications director and admin support.
Improve website content to better describe RIO and the programs coordinated (e.g., the about tab contains more information about boards than the agency).	High	Communications director and admin support	Google analytics, user feedback	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Increase board member and employee knowledge of agency happenings by including them in communications distributions (i.e., press releases, newsletters, program updates).	High	Communications director	Feedback and metrics	Complete.
Coordinate board education program, support the onboarding of new members.	Medium/high	Communications director	Feedback and metrics	Complete.

Educating lawmakers about the agency's role and its growth in preparation for the 2025 legislative session.	Medium/high	Executive director and communications director	Feedback	Ongoing activity.
Highlight employee accomplishments during board, committee, and staff meetings.	Medium	Executive director and communications director	Feedback	Complete, protocol adopted.

Objective 2: Increased member awareness of the TFFR program, how it works and who administers the program.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Relaunch member (active and retired) newsletters to provide regular communications about program activity and events.	High	Communications director and retirement services staff.	Feedback and metrics	Complete. Additional resources required for a consistent stream of communications.
Update RIO's website content to identify the agency's role, improve TFFR's program descriptions, and balance its presence (e.g., TFFR dominates the website with most of the links and graphics on the home page directed to the program.)	High	Communications director and retirement services staff.	Google analytics, user feedback	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Develop quick start guide directed to newer members. Include with enrollment letters and distributed during presentations and at tradeshows.	High	Communications director with support from retirement services staff	Feedback	Additional time/ resources required to achieve objective.
Redevelop introductory presentation for newer members. Name presentation to better define content. Identify speaking opportunities (i.e., regional and large district in-service events). Also offer a virtual that is recorded and share online and in member communications.	Medium/high	Communications director with support from retirement staff	Feedback	Additional time/ resources required to achieve objective.
Rework enrollment letter, breaking it down intro a series of shorter communication that introduce the pension program to new members in more easily digestible manner.	Medium/high	Communications director with support from retirement staff	Feedback	Additional time/ resources required to achieve objective.

Develop a short video introducing the program that can be featured on the website and distributed to school districts for play at in-service events.	Medium	Communications director with support from retirement services staff	Feedback	Additional time/ resources required to achieve objective.
Initiate and foster relationships with education associations and the teachers' union to ensure their program messaging is consistent with the agency's.	Medium	Communications director with support from retirement services staff	Feedback	Ongoing activity.
Evaluate member handbook (i.e., review content and compare to peer publications) to improve the material provided to members	Medium/low	Communications director with support from retirement services staff	Feedback	Additional time/ resources required to achieve objective.

Objective 3: Improved employer awareness of TFFR program requirements.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Model 2 Partial – Whole Percentage Requirement	High	Communications director with support.	Adoption	See attached plan.
Update RIO's website content to identify the agency's role and better describe program requirements.	High	Communications director with support from retirement services staff	Google analytics, user feedback	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Update format and promotion of Info Mixers, educational webinar for TFFR employers.	Medium/High	Communications director with support from retirement services staff	Feedback and metrics	Complete, additional changes may be made after launch of PAS.
Update format and promotion of new business manager workshop, an educational webinar for new TFFR employer staff members.	Medium/High	Communications director with support from retirement services staff	Feedback and metrics	Complete, additional changes may be made after launch of PAS.
Develop a communication (i.e., a welcome letter) that introduces new business managers to the pension program.	Medium	Communications director with support from retirement services staff	Feedback	Additional time/ resources required to achieve objective.
Initiate and foster relationships with education associations to ensure messaging is consistent and garner their support in educating about the program.	Medium	Communications director with support from retirement services staff	Feedback	Ongoing activity.
Evaluate employer handbook (review content and compare to peer publications) to improve the materials provided to employers.	Medium/low	Communications director with support from retirement services program mgr.	Feedback	Additional time/ resources required to achieve objective.

Objective 4: Increased awareness of investment program operations, how it works and who administers the program.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Improve RIO's website content to identify the agency's role and better describe program activities (e.g., investment division lacks a landing page for the program that describes its work.)	High	Communications director and admin support	Google analytics, user feedback	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Relaunch investment newsletter to provide regular communications. Determine audience, distribution, and frequency of publication.	High	Communications director and investment division staff.	Feedback and metrics	Complete. Additional resources required for a consistent stream of communications.
Host an investment seminar to educate policy makers, instill confidence in client funds, and add new cliental.	Medium/high	Communications director and investment division staff	Feedback and metrics	Complete.
Develop a fact sheet about the program.	Medium/high	Communications director and investment division staff	Feedback	Additional time/ resources required to achieve objective.
Seek out speaking opportunities for staff in order to raise the profile of the program.	Medium	Communications director and investment division staff	Ongoing	Ongoing activity.
Identify investment publications to target for news about division activities.	Medium	Communications director and investment division staff	Ongoing	Ongoing activity.

Goal 2: Evaluate and develop or improve the communications tools used to help stakeholders understand both RIO's day-to-day and strategic communications.

Objective 1: Understand and define opportunities for improvements in both day-to-day and strategic communications. Improve communication processes.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Send important, widespread communications via GovDelivery (i.e., an email service provider) to allow the office to track metrics that help to determine effectiveness.	High	Communications director and admin support	Feedback and metrics	Complete, additional resources required to track audiences accurately.
Update RIO's website structure and improve branding.	High	Communications director and admin support	Successful completion	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.

Develop an intranet site (SharePoint based) that can be used to inform staff of agency activities, host HR policies and other resources.	Medium/high	Executive team and comms director, will require input from NDIT	Feedback and metrics	In early stages of development.
Incorporate graphics and links into email signatures to promote events and communications.	Medium	Communications director and RIO staff.	Feedback	Complete.
Evaluate social media options, determine if the office should have a presence. Select appropriate platforms and implement social media plan.	Medium	Communications director	Metrics	Complete.

Objective 2: Evaluate and update current communications assets and bring them into alignment with the state of North Dakota's brand standard.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Update RIO's website structure and improve branding.	High	Communications director and admin support	Successful completion	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Update board materials and bring on brand.	Medium/high	Communications director and admin support	Successful completion	Complete.
Evaluate existing print assets (i.e., letterhead, business cards, etc.) and bring on brand.	Medium/high	Communications director and admin support	Successful completion	Complete.
Incorporate graphics and links into email signatures to promote events and communications.	Medium	Communications director and RIO staff.	Feedback	Complete.

Goal 3: Develop and coordinate the delivery of messages to project stakeholders regarding TFFR's new pension administration system, aka the Pioneer Project, set to launch in fall 2024.

Objective 1: Create awareness of the new pension administration system (PAS) and onboard employer partners.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
*My*TFFR Launch	High	Communications director and retirement services staff.	Utilization of the new system.	See attached plan.
Plan and promote PAS project previews.	High	Communications director	Successful completion	Ongoing activity.
Plan and promote user education.	High	Communications director	Successful completion	Ongoing activity.

Develop message points to ensure staff are sharing the same information.	High	Communications director	Successful completion	Ongoing activity.
Incorporate into employer communications.	High	Communications director	Successful completion	Ongoing activity.
Encourage employers to sign up for ACH in preparation for launch of new system.	High	Communications director with support from retirement services staff	Successful completion	Complete.

Objective 2: Create awareness of the new pension administration system (PAS) and onboard members.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Encourage members to establish online accounts in preparation for the transition to the new PAS.	High	Communications director with support from retirement services staff	Successful completion	Ongoing.
Develop an onboarding plan for members that includes a MyTFFR quick start guide introducing the new PAS. Include with member enrollment letters, distribute at presentations and tradeshows.	High	Communications director with support from retirement services staff	Successful completion	Additional time/ resources required to achieve objective.
Plan and promote user education.	High	Communications director	Successful completion	Ongoing.
Develop message points to ensure that all staff are sharing the same message.	High	Communications director	Successful completion	Ongoing.
Incorporate into member communications.	High	Communications director	Successful completion	Ongoing.
Consider securing marketing/vanity URL, e.g., mytffr.nd.gov.	Medium	Communications director and NDIT	Successful completion	Complete.

Goal 4: Support the growth of the investment services division including the hiring and development of an in-state investment team in summer 2024.

Objective 1: Educate external stakeholders on the value of an internal investment team.

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Develop a communication and/or improve the agency's website to better describe the division's role (i.e., review content and compare to peer organizations).	High	Communications director and investment division staff	Feedback	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Host an investment seminar to educate policy makers, instill confidence in client funds, and add new cliental.	Medium/high	Communications director and investment division staff	Feedback and metrics	Complete.

Devise a method and structure for obtaining department news that can be shared with stakeholders.	Medium/low	Communications director and investment division staff	Feedback	Complete.
Research and contract for a media tracking service that can be used to monitor investment services news.	Medium/low	Communications director	Successful completion and metrics	Complete.

Objective 2: Support the growth and development of the team, particularly those who working in a hybrid or remote environment. (This objective also aligns with Goal #2, evaluate and develop or improve communications tools.)

Tactic	Priority	Assigned	Metrics and/or Notes	Progress to date
Develop a communication and/or improve the agency's website to better describe the division's role (review content and compare to peer organizations).	High	Communications director and investment division staff	Feedback and metrics	Navigation improvements and cosmetic changes made. Additional time/resources required to address content.
Develop an intranet that can be used to inform staff of agency activities, host HR publications and other resources.	Medium/high	Communications director and admin support	Feedback and metrics	In early stages of development.
Provide communications support for tracking and publishing/sharing program successes.	Medium	Communications director and admin support	Feedback and metrics	Complete.

BOARD ACTION REQUESTED: Board Acceptance

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MEMORANDUM

TO: TFFR Board of Trustees

FROM: Sarah Mudder, communications and outreach director

DATE: Nov. 21, 2024

RE: Model 2 Partial – Whole Percentage Requirement Communications Plan

The Model 2 Partial Communications Plan outlines the communications strategies used to ensure impacted business partners understand the requirement and adopts a model that utilizes member contributions paid by the employer that are whole percentages by the July 1, 2025, deadline.

1. **Identify Key Stakeholders**
   - **Target Audience**: Business Partners using Model 2 Partial w/ member contributions paid by the employer that are not whole percentage - business manager, school administrator, and school board president.
   - **Internal Team**: Sarah, Tami, Deneen, Rachelle, Denise, Jeff, Chad and Jan.
2. **Communication Channels**
   - **Newsletters**: Briefly aka the employer newsletter.
   - **Presentations**: Info mixers (i.e., employer webinars) and other business manager/administrator presentations (i.e., NDCEL, NDSBA, and NDASBM).
   - **Direct Outreach**: Personalized letter to employers with details about the required changes.
   - **Phone/email**: Follow-up contact to remind and provide additional support to employers needing clarification.
3. **Messaging Focus**
   - Clear explanation of the policy change requiring switch to full percentage.
   - After July 1, 2025, new pension administration system will not accept member contributions paid by employers that are not a whole percentage, resulting in an error that will leave the employer unable to submit reports.
   - Deadline for change is July 1, 2025, no exceptions.
   - Repeat message in each touchpoint to ensure change is made by deadline.
4. **Timeline**
   - **Fall 2023 to October 2024 (completed):**
     - Broadcast requirement in employer newsletter and presentations.
     - Updated Demographics form and the Employer Handbook.
     - Confirm model selection for current school year.

- **October-December 2024**:
  - Presentations at NDCEL and NDSBA, include slide. (Chad)
  - Prepare for direct mail.
    - Identify business partners not using full percentages. (Tami)
    - Prep target audience database for mail merge. (Rachelle)
    - Draft notification letter, include policy and a point of contact for questions. (Sarah)
- **Nov. 2024**
  - Mail letters to business partner cc: administrator and school board president. (Rachelle)
- **Early Jan. 2025** (Before Jan. 20, the K-12 teachers to school boards negotiation notification deadline):
  - Send a reminder email to business manager, cc: administrator and SB president.
  - Track model updates in the PAS. (Jeff)
- **Ongoing through April 30, 2025**:
  - Continue broad communication through presentations and newsletters. (All)
- **Final push from May 1 to June 30, 2025**
  - Send a final communication and make phone calls to business partners that the system indicates have not moved to whole percentage. (Tami w/ assistance)
- **July 2025**
  - Report outcome to board. (Jan)

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MEMORANDUM

TO: TFFR Board of Trustees

FROM: Sarah Mudder, communications and outreach director

DATE: Nov. 21, 2024

RE: *My*TFFR Pension Administration System Communications Plan

The *My*TFFR Pension Administration System Communications Plan outlines the communications strategies used to ensure the successful launch of the new system.

Pre-Launch Communication (Summer 2021 – Fall 2024)

Objective: Build awareness and set expectations.

1. Announce the System Upgrade
    a. Audiences:
        i. Business partners, i.e., employers.
        ii. Active and retired members.
        iii. Associations and union.
        iv. Staff and board members.
    b. Channels:
        i. Newsletters (electronic and direct mail).
        ii. Presentations (virtual and face-to-face).
        iii. Email updates.
        iv. Incorporate into routine communications, i.e., on benefit statements.
    c. Content:
        i. Purpose of the new system.
        ii. Timeline of the launch.
        iii. Name of the new system – *My*TFFR.
2. Internal Team Briefings
    a. Ensure relevant teams are prepared to answer questions and help with any concerns.
    b. Prepare for and address common queries.

During Launch (Fall 2024 – Dec. 9, 2024)

Objective: Ensure smooth transition.

1. Announce and carryout system launch.
    a. Audience:
        i. Business partners, i.e., employers.
        ii. Staff members.
    b. Channels:
        i. Newsletters
        ii. Email updates.

        iii. Website – dedicated “Help” section.
            a. Social media (i.e., training videos on YouTube channel).
            b. Employer self-service handbook and training materials.
        iv. Virtual office hours for business partners.
2. Content
    a. Reminders of system changes.
    b. Employer testing of the new system.
    c. Important dates to note (e.g., blackout period during system transition).

Post-Launch Support (Dec. 10, 2024, to Ongoing)

Objective: Provide ongoing assistance to ensure members are comfortable using the system. Continue to provide support to employers.

1. Provide support and encourage adoption with how to guides.
    a. Audience:
        i. Active and retired members
        ii. Business partners, i.e., employers.
    b. Channels:
        i. Email updates.
        ii. Direct mail.
        iii. Announcements on the agency’s website.
        iv. Newsletters.
        v. Website – dedicated “Help” sections for members and employers.
            a. Social media (i.e., training videos on YouTube channel).
            b. Employer self-service handbook.
        vi. Kiosk – member access in the office and at events.
        vii. Virtual office hours support for Business Partners
        viii. Text messaging blasts directed at members using Twilio.
    c. Content:
        i. Step-by-step instructions for common tasks (e.g., accessing account, updating beneficiary, address or banking info, and retirement application process).
        ii. FAQ covering common questions/issues.
        iii. Customer support contact information.

Evaluation and Feedback (Spring 2025)

Objective: Gather feedback and adjust, as needed.

1. Survey
    a. Audience:
        i. Active and retired members
        ii. Business partners, i.e., employers.
    b. Channels: Email.
    c. Content: Collect feedback on user experience, ease of use, and areas for improvement.
2. Customer Support Review: Analyze common support requests to identify areas where additional training or adjustments might be needed.

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MEMORANDUM

TO: **TFFR**
FROM: **Chad Roberts, DED/CRO**
DATE: **November 14, 2024**
RE: **November TFFR GPR Committee update**

The TFFR GPR Committee met on Thursday, November 7, 2024, at 3:30 pm. All members of the committee were present. The committee took the following actions:

- Reviewed and recommended edits and changes to sections of the TFFR Policy Manual identified in the annual committee work plan
- Reviewed the final draft of the agency-sponsored legislative bill regarding RMD before its submission to the Legislative Council

The following link is to the committee materials for your reference:

November 7, 2024 – TFFR GPR Material

Board Action Requested: Information only

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MEMORANDUM

TO: TFFR Board
FROM: Jan Murtha, Executive Director
DATE: November 20, 2024
RE: Employee Benefits Programs Committee Update

Representatives from GRS and RIO staff appeared before the EBPC at its meeting on October 31, 2024, to present on the actuarial valuation report for the TFFR Program. The meeting recording and materials may be found at Employee Benefits Programs Committee | North Dakota Legislative Branch.

BOARD ACTION: Information only.

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MEMORANDUM

TO: **TFFR Board**

FROM: **Dottie Thorsen, Internal Auditor**

DATE: **November 21, 2024**

RE: **Audit Committee Update**

The Audit Committee met on November 18, 2024. The Committee received a presentation from UHY and approved the Year End Financial Statement Audit for fiscal year 2024. The RFP for Internal Audit Co-Sourcing was reviewed and approved. Updates were received on 2024-25 First Quarter and Current Activities.

The following link has the committee materials that were presented for your reference:
https://www.rio.nd.gov/sites/www/files/documents/PDFs/SIB%20Audit/Board/Materials/sibauditmat20241118.pdf

BOARD ACTION REQUESTED: Information Only.

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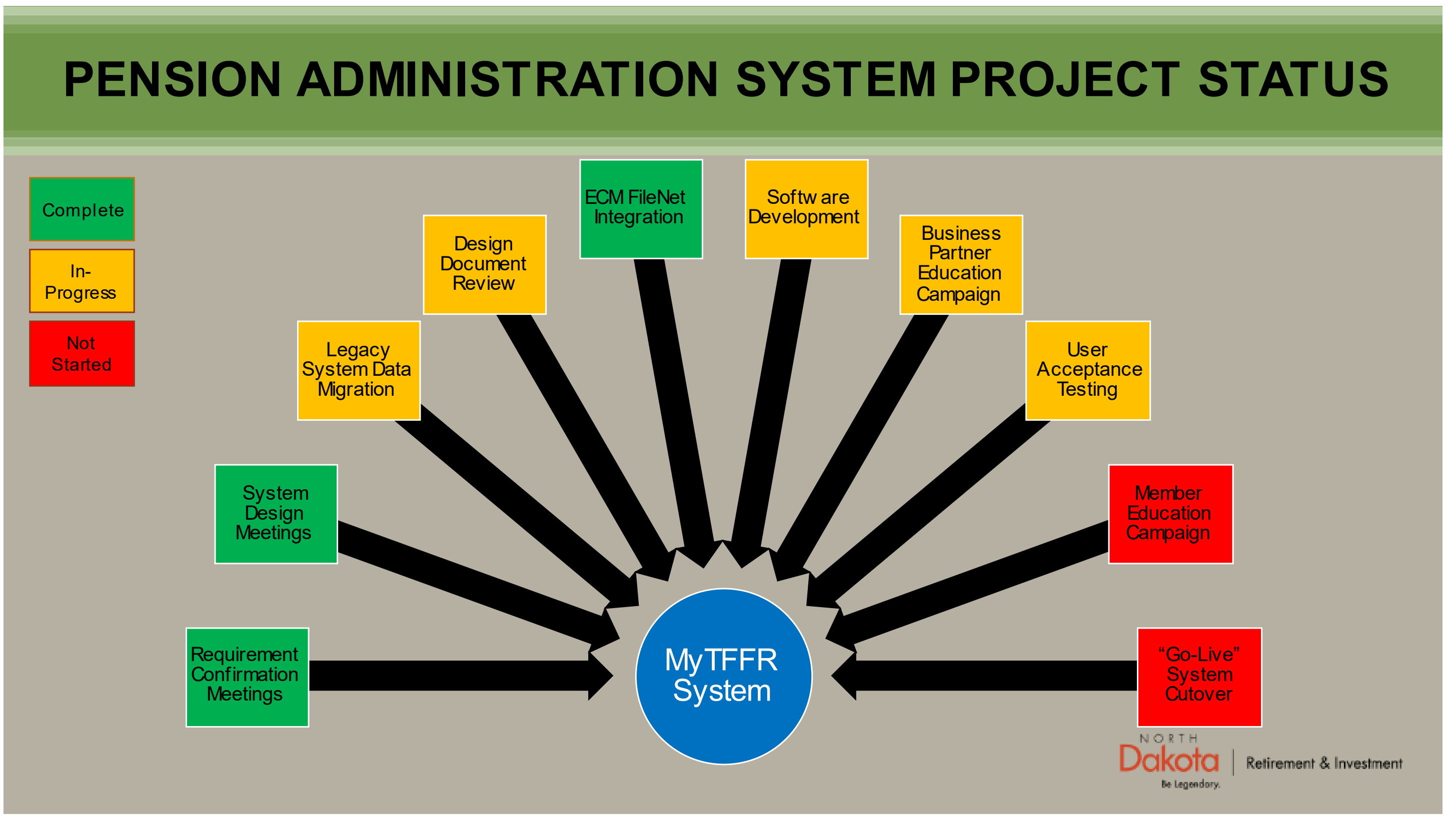
MEMORANDUM

TO: TFFR
FROM: Chad R. Roberts, DED/CRO
DATE: November 19, 2024
RE: November 2024 pension administration system project update

Project Status



RIO staff and the vendor completed lifecycle testing on November 18, 2024. Testing for the numerous problem incident reports (PIR) discovered during that time is now underway. The PIR testing is anticipated to be completed on November 22, 2024.

Staff has been planning for cutover, the time when the existing pension administration system is discontinued and the new system is put on-line. Retirement Services, Fiscal, Business Partner support, and Communications have all been working through tasks and preparing processes for the cutover.

Employer testing, the phase during which our business partners login and upload test reports, is underway. RIO has published user guides and training videos for business partners. Live training was also conducted at the 2024 NDSBA conference. Staff and the vendor are identifying any issues the business partners are having and working with them to resolve them. All three of the external vendors supporting the business partners have now deployed their patches so that their software can create reports our system can process.

Testing of the scanning function of documents and their preservation in the North Dakota FileNet system is progressing, and no issues have been found with this component.

Budget Status

In late August 2024, the project realized a savings of approximately $60,000 by discovering an alternative method to incorporate text messaging at a reduced cost. These savings will offset the additional hosting expense for the delay in going live from October to December. It will also offset the approximate $13,000 cost related to adding a return to teaching benefits calculator to the system.

The overtime budget has been utilized very little, creating a possible reserve for any remaining unexpected costs.

The cost to maintain a maintenance agreement on the existing system for the first three months of 2025 has yet to be determined. The contract is being developed now. The current contract expires December 31, 2024. This cost should be absorbed in the current surplus from the project fund.

During planning for the new system's disaster recovery site, an ongoing NDIT support cost of $305/month was identified. This cost was not identified during contract negotiations.

Unanticipated Issues

The project's go-live date had been targeted for December 9, 2024. Seven deferred functionality modules were planned to go-live in February 2025. Due to some remaining tasks that need to be completed, the go-live will be delayed until either early January or early February 2025. The vendor is working to determine if they can complete all development, including the deferred modules for a February go-live so that the system's full functionality is activated at one time. The issues creating the delay include the following: PIR resolution, development and retesting; documentation delivery from the vendor, namely the member user guide and toolkit; and employer testing and readiness.

The vendor is anticipated to be able to provide feedback so that project management can set a rescheduled go-live date by November 22, 2024.

Board Action Requested: Information only

INVESTMENT PERFORMANCE

Matt Posch, CFA

November 21, 2024

THE MARKET

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PERFORMANCE – BENCHMARK INDICES

Summary of Returns September 30, 2024					
Benchmark Indices (% change, annualized)	**YTD**	**1 Yr**	**5 Yr**	**10 Yr**	**10 Yr Volatility**
Russell 1000	21.2%	35.6%	15.6%	13.1%	18.0%
Russell 2000	11.2%	26.7%	9.4%	8.8%	22.9%
S&P 500	22.1%	36.2%	16.0%	13.4%	17.9%
MSCI ACWI IMI Net	17.8%	30.9%	11.9%	9.2%	14.4%
MSCI World ex US	13.1%	24.9%	8.4%	5.7%	14.5%
MSCI Emerging Markets	16.9%	26.0%	5.7%	4.0%	15.9%
Bloomberg Aggregate	4.4%	11.5%	0.3%	1.8%	4.7%
Bloomberg Gov/Credit	4.4%	11.3%	0.4%	2.0%	5.0%
Bloomberg US High Yield	8.0%	15.7%	4.7%	5.0%	5.2%
NCREIF Property Index (09/30/2024)	-0.5%	-3.5%	3.3%	5.9%	4.1%

Source: Bloomberg

PERFORMANCE – BENCHMARK INDICES

Summary of Returns November 15, 2024					
Benchmark Indices (% change, annualized)	**YTD**	**1 Yr**	**5 Yr**	**10 Yr**	**10 Yr Volatility**
Russell 1000	24.2%	32.4%	15.0%	13.0%	18.0%
Russell 2000	15.0%	29.6%	9.1%	8.4%	22.9%
S&P 500	24.6%	32.1%	15.3%	13.2%	17.8%
MSCI ACWI IMI Net	16.6%	24.5%	10.6%	9.0%	14.4%
MSCI World ex US	5.4%	13.2%	5.9%	5.1%	14.5%
MSCI Emerging Markets	8.3%	13.0%	3.1%	3.4%	15.9%
Bloomberg Aggregate	1.3%	7.1%	-0.2%	1.4%	4.7%
Bloomberg Gov/Credit	1.3%	6.9%	-0.1%	1.6%	5.1%
Bloomberg US High Yield	7.9%	13.5%	4.6%	4.9%	5.2%
NCREIF Property Index (09/30/2024)	-0.5%	-3.5%	3.3%	5.9%	4.1%

Source: Bloomberg

HAS INFLATION PEAKED?[1]

+9.1%

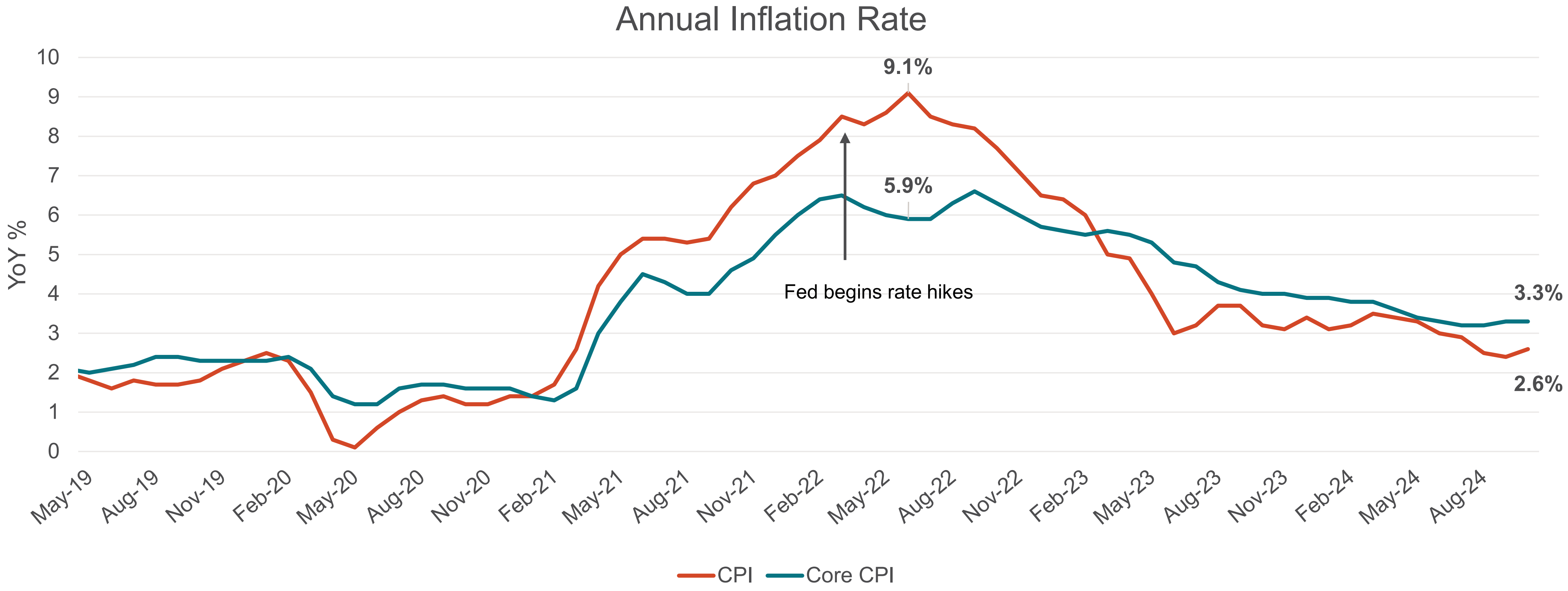
ANNUAL INFLATION RATE
(June 2021 thru June 2022)

+2.6%

ANNUAL INFLATION RATE
(October 2023 thru October 2024)
3.3% Ex Food & Energy

1. Bureau of Labor Statistics

INFLATION PAST 5 YEARS



Inflation continues to cool

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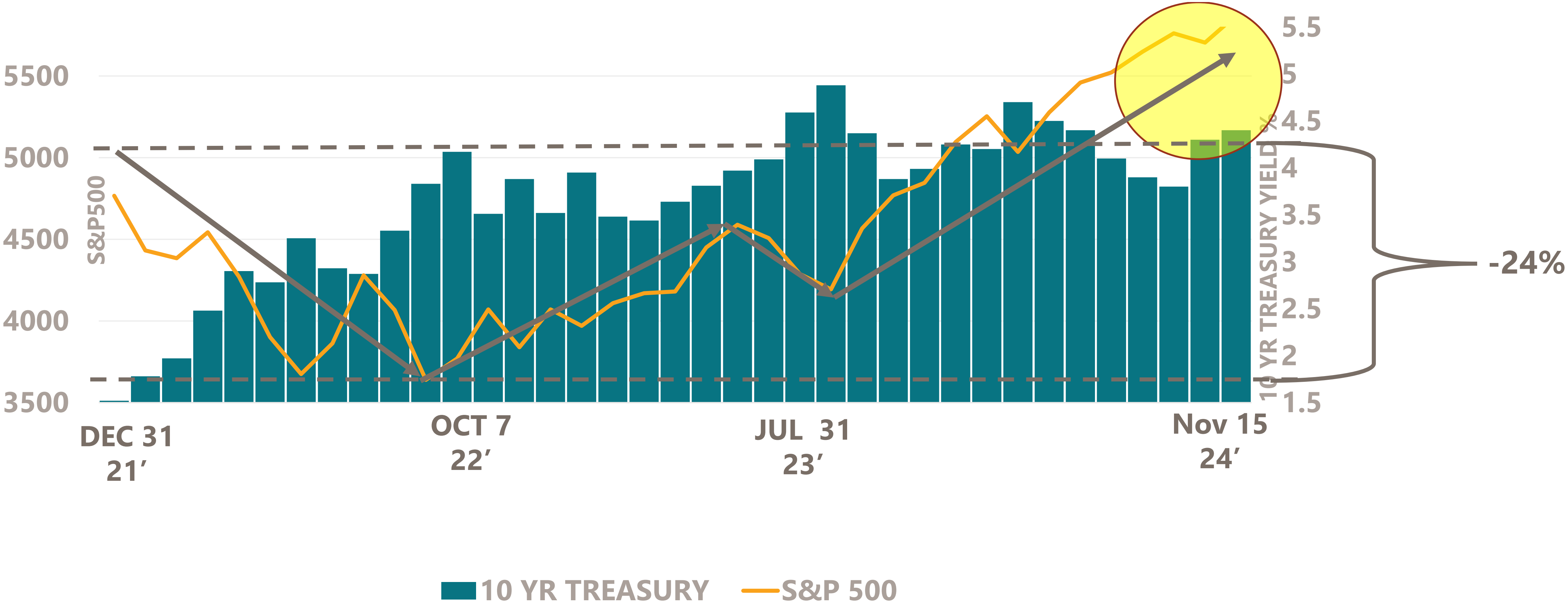
INFLATION EXPECTATIONS TRACKED BY S&P500[1]



1. FRED

COMPETING NARRATIVES

	LOW GROWTH	HIGHER GROWTH
HIGH INFLATION	**(Hard Landing)** ▪ High Levels of Debt – Higher Interest Rates ▪ Tight Labor Market/Labor Force Growth ▪ Consumer Savings Are Running Out ▪ Higher Energy Prices From Policy ▪ **Political Risk** ▪ Student Loan Payments Restart Reducing Retail Spending	**(No Landing)** ▪ Continued Government Spending ▪ Tight Labor Market/Labor Force Growth ▪ Inflation Psychology ▪ Higher Energy Prices From Policy ▪ Millennials in Peak Spending Years ▪ Housing Shortage/Higher Prices ▪ Real Consumer Income Growth
LOW INFLATION	**(Soft Landing)** ▪ Housing Inflation Abates ▪ Lower Interest Rates ▪ Lower Growth/Lower Energy Prices ▪ Student Loan Payments Restart Reducing Retail Spending ▪ Reduced Government Spending ▪ Political Risk Diminish	**(Goldilocks)** ▪ Low Unemployment Buoys Economy ▪ Lower Interest Rates ▪ Millennials in Peak Spending Years ▪ Reduced Government Spending ▪ Global Political Risks Are Resolved/ Peace Dividend ▪ Productivity Boom From AI

GOOD NEWS[1]

BLOOMBERG AGG YIELD[1]: 4.84%

BEST GUESS FOR FUTURE BOND RETURN!

1. Fixed income benchmark; yields are the best estimate of future bond returns.

PERFORMANCE

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TFFR INVESTMENT MANAGEMENT BENEFITS

TFFR TEN YEAR AVERAGE RETURN[1]

7.3% > **6.9%** > **5.9%**

FUND RETURN

POLICY RETURN

60% EQUITIES/40% FIXED INCOME RETURN[3]

1.4%/$506 MILLION Benefit[2]

1. Thru September 2024; North Dakota RIO ACFR
2. Starting with $3.4 Billion of assets
3. 60% MSCI World/40% Bloomberg Aggregate – 10 years

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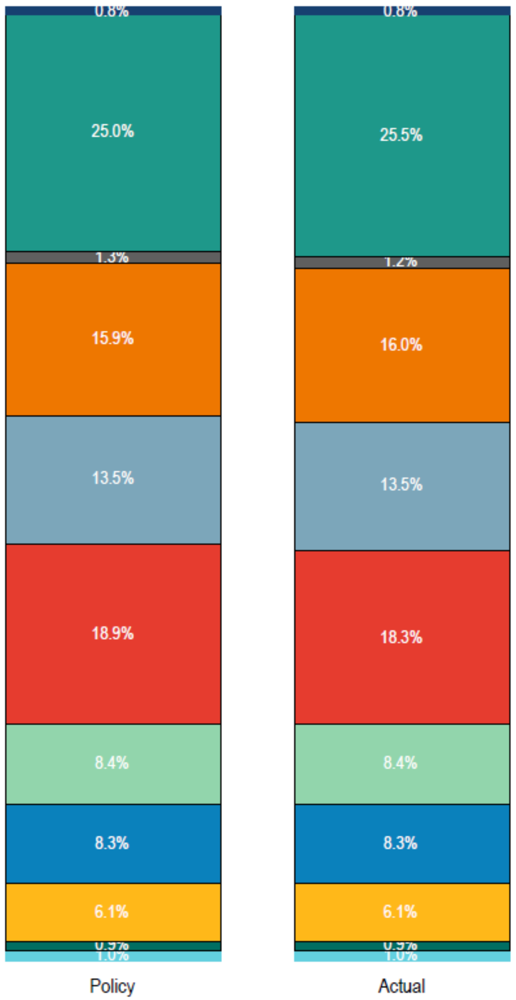
TFFR ASSET ALLOCATION



	Current Balance ($)	Current Allocation (%)	Policy Allocation (%)	Differences ($)
Domestic Equity All Cap	25,494,408	0.8	0.8	552
Domestic Equity Large Cap	865,086,682	25.5	25.0	17,780,904
Domestic Equity Small Cap	42,177,050	1.2	1.3	-459,811
International Equity	542,568,610	16.0	15.9	3,124,054
Private Equity	457,819,827	13.5	13.5	16,713
Investment Grade Fixed Income	622,378,616	18.3	18.9	-20,229,492
Below Investment Grade	284,179,373	8.4	8.4	-1,412,915
Real Estate	282,723,903	8.3	8.3	-16,875
Infrastructure	205,774,089	6.1	6.1	-9,870
Timber	31,309,252	0.9	0.9	10,537
Cash and Equivalents	35,142,749	1.0	1.0	1,196,204
Total	**3,394,654,560**	**100.0**	**100.0**	

September 2024 values – Verus

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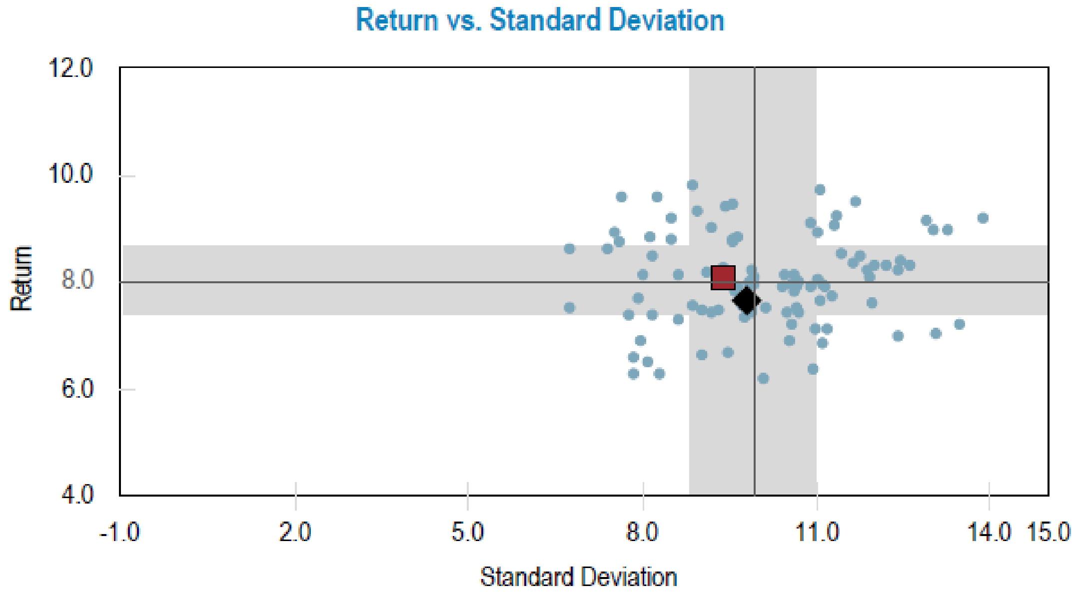
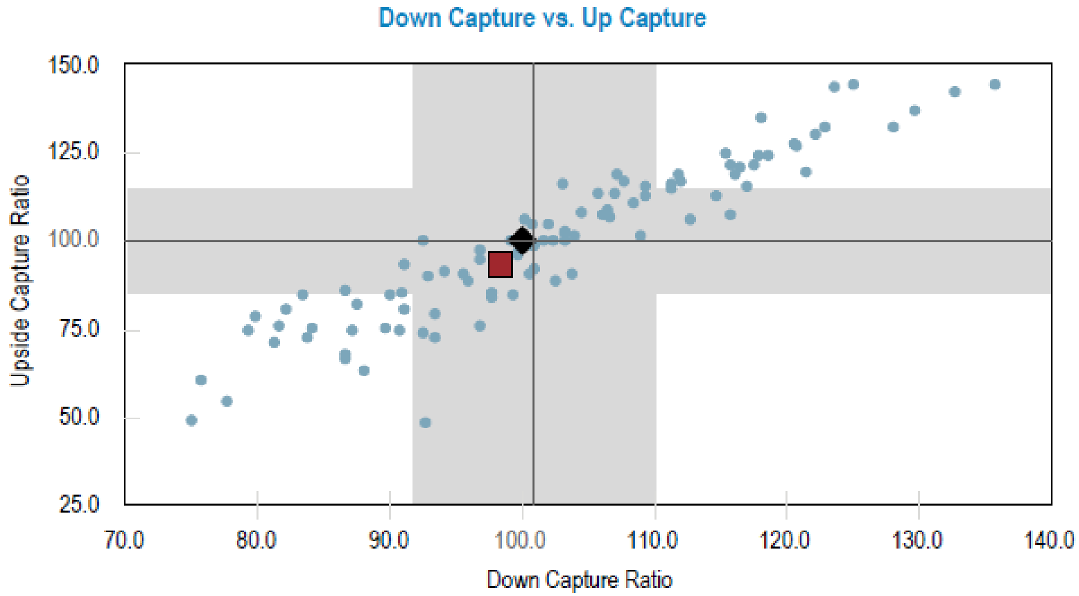
TFFR PERFORMANCE

AS OF September 30, 2024

TFFR $3.4 Billion	Year to Date	1 Year	3 year	5 Year[1]
Total Fund Return - Net	8.8%	14.9%	4.1%	8.1%
Policy Benchmark Return	9.3%	15.8%	4.0%	7.7%
Total Relative Return[1]	-0.5%	-0.9%	0.1%	0.4%

RISK





InvMetrics Public DB > $1B

	Return	Standard Deviation
Total Fund	8.09	9.37
Corridor Target Index	7.69	9.78
Median	8.03	9.89
Population	100	100

InvMetrics Public DB > $1B

	Down Capture	Up Capture
Total Fund	93.80	98.35
Corridor Target Index	100.00	100.00
Median	100.22	100.88
Population	100	100

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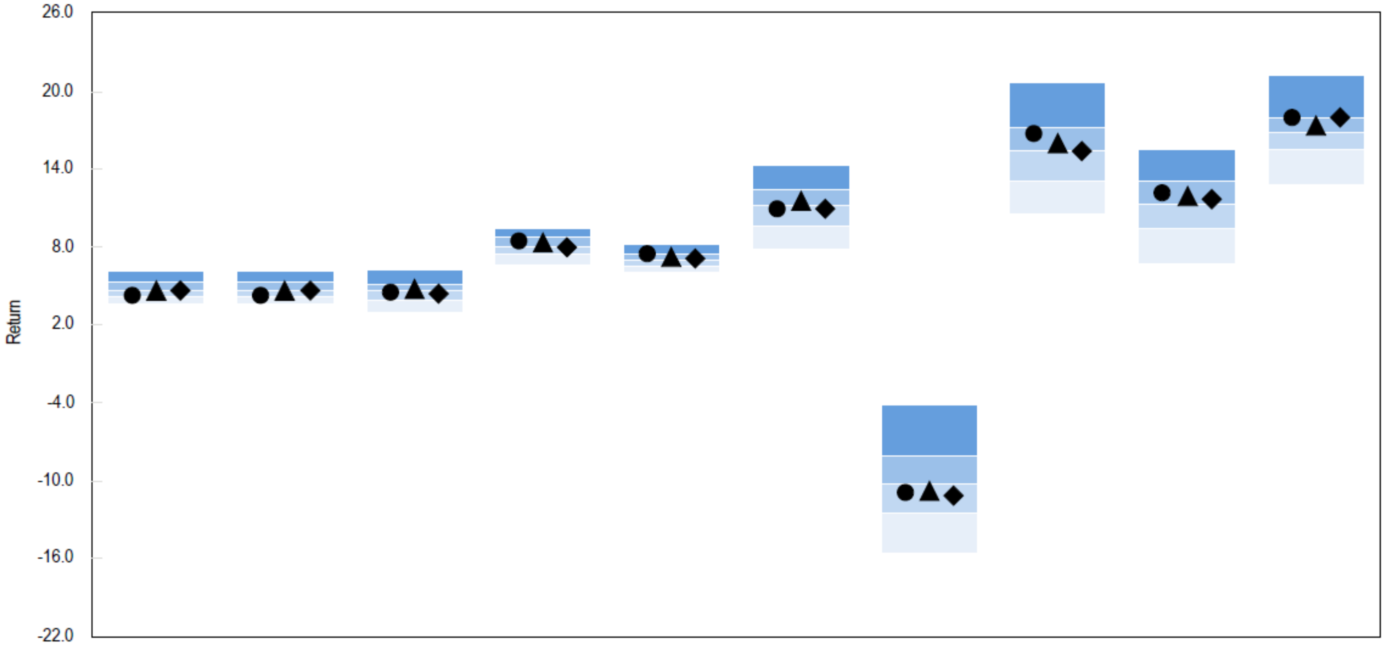
TFFR PERFORMANCE

Total Fund vs. InvMetrics Public DB > $1B



	3 Mo	Fiscal YTD	3 Yrs	5 Yrs	10 Yrs	2023	2022	2021	2020	2019
● Total Fund	4.3 (71)	4.3 (71)	4.5 (56)	8.4 (32)	7.5 (25)	11.0 (53)	-10.9 (59)	16.7 (33)	12.2 (38)	18.0 (26)
▲ Policy Index	4.6 (55)	4.6 (55)	4.8 (43)	8.4 (32)	7.2 (38)	11.6 (39)	-10.7 (58)	16.1 (44)	12.0 (44)	17.4 (36)
◆ Corridor Target Index	4.7 (50)	4.7 (50)	4.4 (58)	8.0 (49)	7.1 (46)	10.9 (55)	-11.2 (62)	15.4 (50)	11.7 (46)	18.0 (26)
5th Percentile	6.1	6.1	6.2	9.5	8.2	14.3	-4.1	20.7	15.5	21.2
1st Quartile	5.3	5.3	5.2	8.8	7.4	12.4	-8.0	17.2	13.1	18.0
Median	4.7	4.7	4.6	8.0	7.0	11.2	-10.3	15.3	11.3	16.8
3rd Quartile	4.1	4.1	4.0	7.5	6.5	9.6	-12.5	13.1	9.4	15.5
95th Percentile	3.7	3.7	2.9	6.6	6.0	7.8	-15.6	10.6	6.8	12.8
Population	104	104	101	100	96	177	177	207	217	193

1. September 2024 values – Verus

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MEMORANDUM

TO: **TFFR**

FROM: **Ryan K. Skor, CFO/COO**

DATE: **November 14, 2024**

RE: **Annual Budget and Expense Report**

Enclosed are the following annual budget and expense reports for fiscal year ended June 30, 2024:

- Expenditure Summary Report
- Budget Appropriation Status Report
- PAS Modernization Project Summary
- Schedule of Consulting Expenses
- Schedule of Investment Expense

Board Action Requested: Board acceptance.

RETIREMENT AND INVESTMENT OFFICE
EXPENDITURE SUMMARY REPORT
FISCAL YEAR ENDED JUNE 30, 2024

	TFFR		SIB		Total RIO	
	Actual Expenses	% of Total	Actual Expenses	% of Total	Actual Expenses	% of Total
CONTINUING APPROPRIATIONS						
INVESTMENT EXPENDITURES	$ 17,460,325	5.8%	$ 75,500,795	94.9%	$ 92,961,120	24.4%
MEMBER CLAIMS						
ANNUITY PAYMENTS	265,434,894		-		265,434,894	
REFUND PAYMENTS	12,225,640		-		12,225,640	
TOTAL MEMBER CLAIMS	277,660,534	92.3%	-	0.0%	277,660,534	73.0%
OTHER CONTINUING APPROPRIATIONS	800,028	0.3%	1,413,677	1.8%	2,213,705	0.6%
TOTAL CONTINUING APPROPRIATIONS	295,920,887	98.4%	76,914,472	96.7%	372,835,360	98.0%
APPROPRIATED EXPENDITURES						
SALARIES AND BENEFITS	1,514,187	0.5%	2,940,181	3.7%	4,454,369	1.2%
OPERATING EXPENSES *	2,923,420	1.0%	218,216	0.3%	3,141,637	0.8%
SIB EXPENSES ALLOCATED TO TFFR	500,628		(500,628)		-	
TOTAL APPROPRIATED EXPENDITURES	4,938,236	1.6%	2,657,770	3.3%	7,596,005	2.0%
TOTAL EXPENDITURES	$ 300,859,123		$ 79,572,242		$ 380,431,365	

RETIREMENT AND INVESTMENT OFFICE
2023-2025 BIENNIUM APPROPRIATION STATUS REPORT
AS OF JUNE 30, 2024

	2023-2025 BUDGET	ADJUSTED APPROPRIATION	EXPENDITURES BIENNIUM TO DATE ACTUAL	BUDGET AVAILABLE	% BUDGET AVAILABLE	% OF BIENNIUM REMAINING
SALARIES AND BENEFITS	$ 8,910,047.00	9,466,151.30 **	4,454,365.82	$ 5,011,785.48	52.94%	50.00%
OPERATING EXPENDITURES	2,869,937.00	4,277,560.00 *	1,571,236.08	2,706,323.92	63.27%	50.00%
CAPITAL ASSETS	0.00	4,150,213.50	1,570,402.50	2,579,811.00	62.16%	50.00%
CONTINGENCY	200,000.00	200,000.00	0.00	200,000.00	100.00%	50.00%
TOTAL	$ 11,979,984.00	$ 18,093,924.80	$ 7,596,004.40	10,497,920.40	58.02%	50.00%

* In addition to the Capital Assets line the operating expenditure budget includes $1,407,623 for the TFFR Pension Administration System Project.

** Additional salary is attributed to the vacancy pool created for the 2023-2025 biennium as well as $50,000 salary from the Pension Administration System Project budget.

PAS MODERNIZATION PROJECT
Budget vs Actual as of June 30, 2024

	Budget	Actual Paid	Committed/ Not Yet Paid	Budget Status
Salaries	$ 50,000	$ -	$ -	$ 50,000
Operating	2,650,000	1,971,612	70,091	608,297
Capital Assets	6,300,000	3,720,188	330,996	2,248,816
Total Project Budget	$ 9,000,000	$ 5,691,800	$ 401,087	$ 2,907,113

RETIREMENT AND INVESTMENT OFFICE
SCHEDULE OF CONSULTING EXPENSES
FOR THE YEARS ENDED JUNE 30, 2024 and 2023

	Pension Trust		Investment Trust	
	2024	2023	2024	2023
Actuary fees:				
Segal Consulting	$ 11,813	$ 121,476	$ -	$ -
GRS Consulting	94,329	30,000		
Total Actuary Fees	106,142	151,476	-	-
Auditing/Accounting fees:				
CliftonLarsonAllen LLP	69,954	15,750	17,182	15,750
Project management fees:				
Segal Consulting	322,923	255,599	-	-
Disability consulting fees:				
Sanford Health	360	250	-	-
Legal fees:				
K&L Gates LLP	-	1,351	-	(1,351)
Jackson Walker LLP	55,223	12,101	141,833	44,659
ND Attorney General	11,985	12,747	25,079	17,268
Total legal fees:	67,208	26,199	166,912	60,576
Total consultant expenses	$ 566,586	$ 449,274	$ 184,094	$ 76,326

ND State Investment Board
Schedule of Investment Expenses

	FY 2024				FY 2023			
	Average Market Value	Fees in $	Fees as % of Average MV	Contribution to Total Fees	Average Market Value	Fees in $	Fees as % of Average MV	Contribution to Total Fees
Investment managers' fees:								
Global equity managers	-	-	0.00%	0.00%	153,414,649	1,256,475	0.82%	0.01%
Domestic large cap equity managers	5,022,376,558	8,428,639	0.17%	0.04%	3,901,008,851	5,248,183	0.13%	0.03%
Domestic small cap equity managers	704,679,947	4,999,743	0.71%	0.02%	710,028,452	4,766,011	0.67%	0.03%
Developed international equity managers	3,569,014,017	7,816,942	0.22%	0.04%	2,794,383,481	8,253,205	0.30%	0.04%
Emerging markets equity managers	226,784,639	524,960	0.23%	0.00%	205,361,541	1,003,763	0.49%	0.01%
Investment grade domestic fixed income managers	5,062,162,938	9,963,091	0.20%	0.05%	5,082,705,814	9,276,058	0.18%	0.05%
Below investment grade fixed income managers	563,736,290	9,902,568	1.76%	0.05%	757,991,840	13,916,976	1.84%	0.07%
High Yield Fixed Income	164,698,733	415,717	0.25%	0.00%	-	-	0.00%	0.00%
Private Credit	511,065,967	14,679,413	2.87%	0.07%	-	-	0.00%	0.00%
In State Equity	43,093,869	1,000,000	2.32%	0.00%	-	-	0.00%	0.00%
In State Fixed Income	289,646,516	-	0.00%	0.00%	-	-	0.00%	0.00%
Real estate managers	1,307,938,288	6,638,665	0.51%	0.03%	1,481,965,576	451,825	0.03%	0.00%
TIPS managers	258,516,996	375,322	0.15%	0.00%	540,756,966	632,633	0.12%	0.00%
Timber managers	79,355,992	698,886	0.88%	0.00%	117,024,703	814,521	0.70%	0.00%
Infrastructure managers	1,061,654,886	12,430,748	1.17%	0.06%	922,643,719	18,183,038	1.97%	0.10%
Private equity managers	882,441,402	10,144,002	1.15%	0.05%	839,335,084	9,089,546	1.08%	0.05%
Short term bond managers	1,008,183,898	1,058,706	0.11%	0.00%	780,813,029	879,205	0.11%	0.00%
Balanced fund managers	257,527,269	1,106,726	0.43%	0.01%	237,744,407	1,041,946	0.44%	0.01%
Cash & equivalents managers	164,981,089	85,999	0.05%	0.00%	170,662,726	261,127	0.15%	0.00%
Total investment management fees	**21,177,859,296**	**90,270,126**	**0.43%**		**18,695,840,839**	**75,074,513**	**0.40%**	
Custodian fees		1,710,250	0.01%	0.01%		1,457,180	0.01%	0.01%
Investment consultant fees		838,442	0.00%	0.00%		781,620	0.00%	0.00%
SIB Administrative fees		4,797,557	0.02%	0.02%		3,620,374	0.02%	0.02%
Total investment expenses		**97,616,376**	**0.46%**			**80,933,686**	**0.43%**	
Performance/Incentive Fees (included in totals above)								
Domestic large cap equity managers		3,392,113	0.07%	0.02%		810,463	0.02%	0.00%
Domestic small cap equity managers		-	0.00%	0.00%		-	0.00%	0.00%
Developed international equity managers		-	0.00%	0.00%		850,152	0.03%	0.00%
Emerging markets equity managers		-	0.00%	0.00%		8,584	0.00%	0.00%
Investment grade domestic fixed income managers		3,568,760	0.07%	0.01%		1,027,773	0.02%	0.00%
Below investment grade fixed income managers		12,796,625	1.71%	0.05%		5,935,721	0.78%	0.03%
Real estate managers		(1,539,989)	-0.12%	-0.01%		(7,840,771)	-0.53%	-0.04%
Infrastructure managers		2,230,606	0.21%	0.01%		8,305,051	0.90%	0.04%
Total Performance Fees Paid (excluding private equity)		**20,448,114**	**0.10%**			**9,096,973**	**0.05%**	
Breakdown of Total Fees by Pool								
Pension	7,630,180,809	41,746,069	0.55%		6,971,571,671	34,031,341	0.49%	
Insurance	3,224,003,504	7,592,542	0.24%		2,899,814,778	7,122,555	0.25%	
Legacy	10,065,495,615	47,150,308	0.47%		8,586,065,828	38,824,292	0.45%	

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MEMORANDUM

TO: **TFFR Board**
FROM: **Dotte Thorsen, Internal Auditor**
DATE: **November 21, 2024**
RE: **Quarterly Audit Activities Report**

Audit activities during the first quarter of fiscal year 2025 included:

1. June 30, 2024, Fiscal Year Financial Statement Audit
    a. 2024 Financial Statement Audit Results
        i. Unmodified “clean” opinion
        ii. No material weaknesses were identified.
        iii. No significant deficiencies were identified.

2. Internal Audit Co-Sourcing Request for Proposal – The IA Division is soliciting proposals from qualified firms to establish a vendor who can perform internal audit services on behalf of RIO on an as-needed basis relating to the investment and fiscal divisions.
    a. Reviewed and approved RFP to be issued.
        i. A special Audit Committee meeting will be held in January/February 2025 for a presentation from finalists.
        ii. Tentative start date is March 2025

3. TFFR Pioneer Project
    a. Attended multiple meetings for UAT testing, PIR testing, and life cycle testing
    b. Worked on the Employer Self-Service Committee on preparation for Go-live

BOARD ACTION REQUESTED: Board acceptance.

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MEMORANDUM

TO: **TFFR**

FROM: **Chad R. Roberts, DED/CRO**

DATE: **November 19, 2024**

RE: **FY2024 Annual Ends Report**

Summary

Attached is the Annual Ends Report for TFFR for the 2024 Fiscal Year. The report summarizes and provides metrics for performance of the program to demonstrate the program is adhering to policies and expectations of the TFFR Board and the SIB.

The report addresses four key areas: membership data and contributions, member services, account claims, and trust fund evaluation and monitoring.

BOARD ACTION REQUESTED: Board acceptance.

FY2024 TFFR ANNUAL ENDS REPORT

Chad R. Roberts, MAcc – DED/CRO

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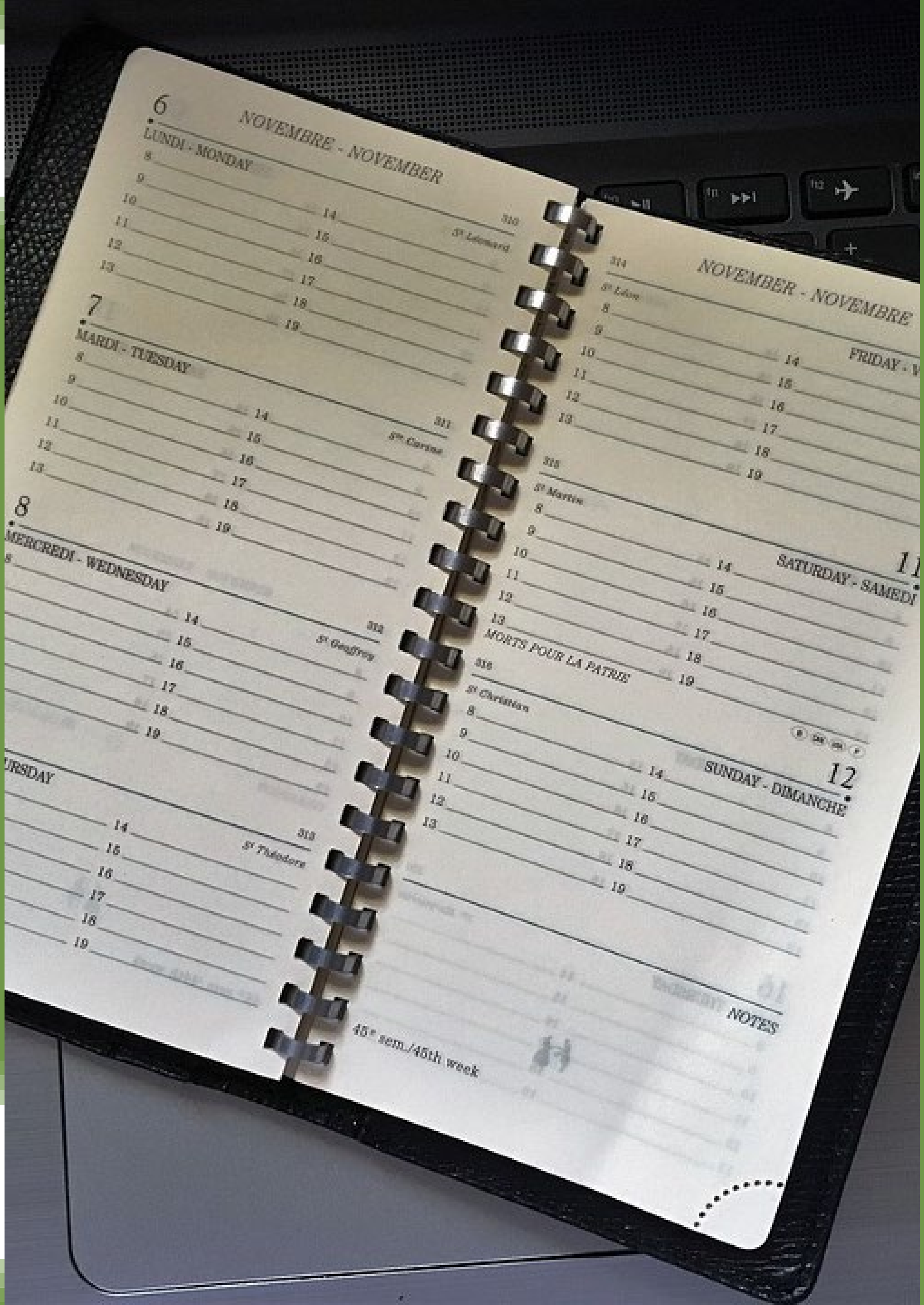
ANNUAL REVIEW TOPICS

- **Account Claims**
  - Payments to members and beneficiaries
  - Refunds, rollovers, & transfers
  - Benefit payment trends
- **Accomplishments of TFFR Program**
  - Member outreach
  - Business partner outreach
  - PAS Project progression
  - Awards and recognition
- **Trust Fund Monitoring**
  - Employer contributions
  - Actuarial results
  - External audit
- **Exceptions to Operations**
  - Staffing changes
  - Internal Audit findings



ACCOUNT CLAIMS

Distributed $277,660,534 total payments in FY2024

- Increase of 5.53% over FY2023

$264,450,311 total regular benefits

- Increase of 4.06% over FY2023
- $29,030 average benefit paid

$12,225,640 total refunds issued

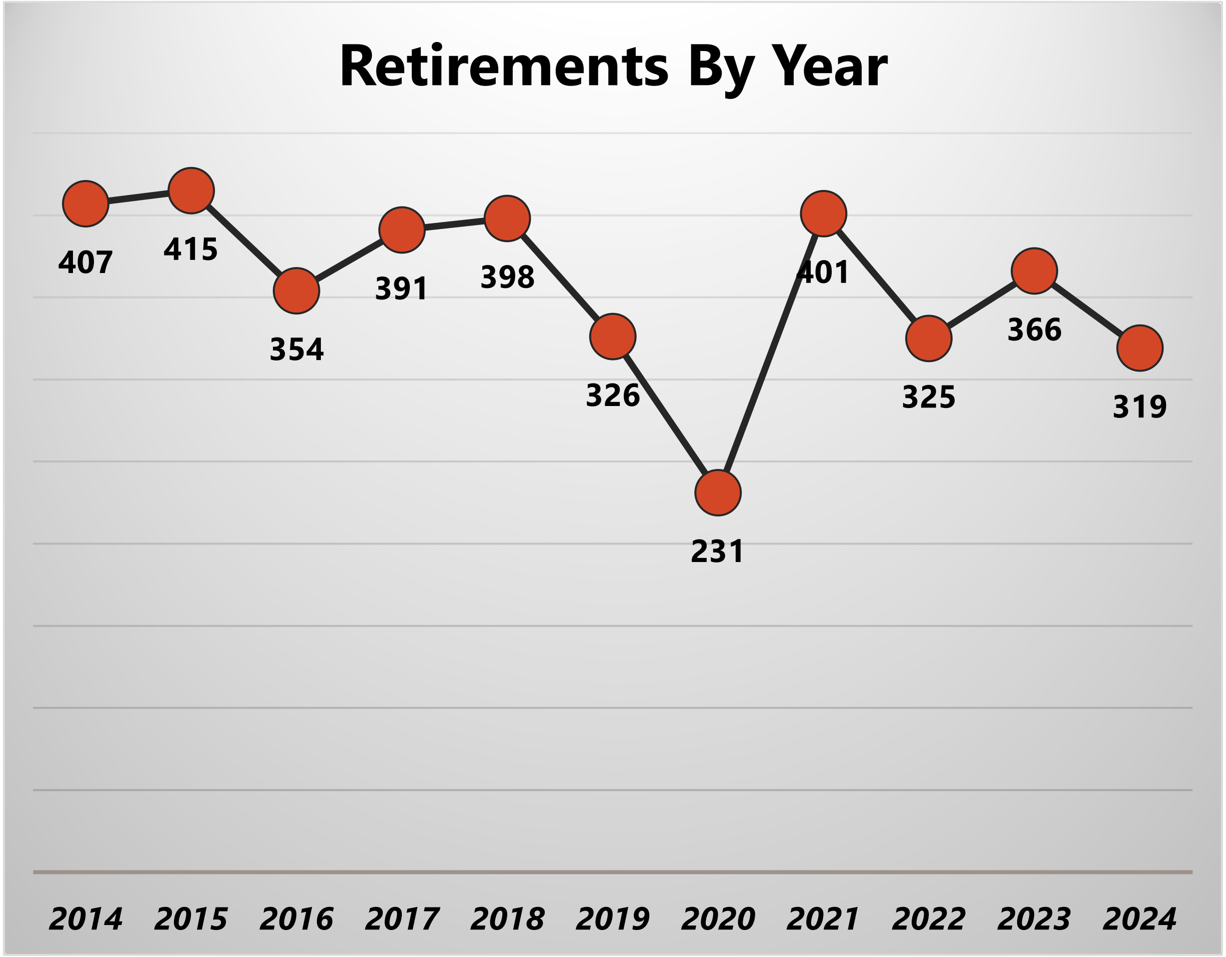
- 35.21% increase over FY2023

$984,583 total partial lump sum payments

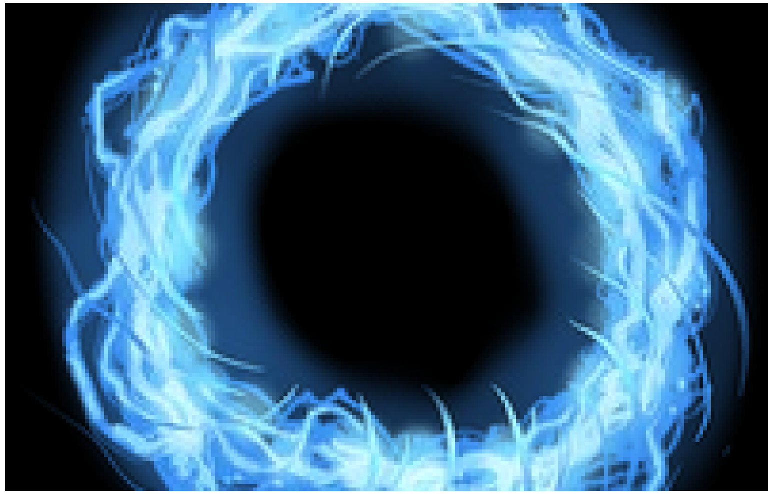
- 33.22% increase over FY2023

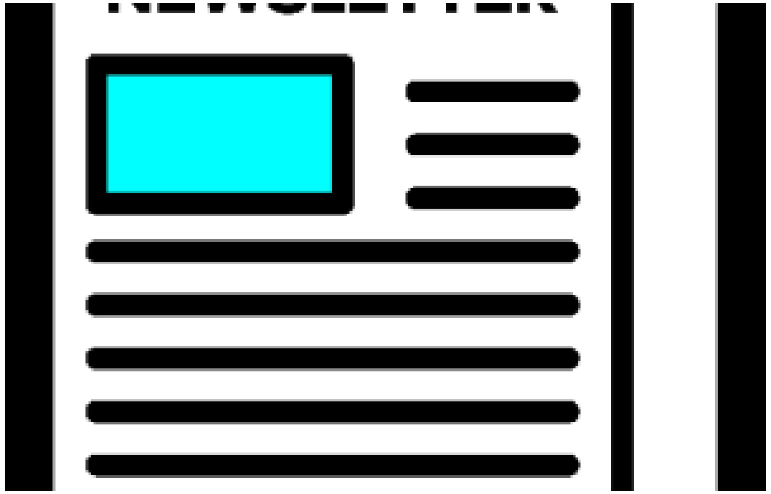
Benefit payment trends

- Number of retirements up 11.2%
- Average benefit increased 1.72%
- Average retiree age increased by 5 months



OUTGOING COMMUNICATIONS TO MEMBERS





Member registrations to online portal increased in FY2024

- 41% (37% in FY2023) Active Members Registered
- 31% (28% in FY2023) Retired Members Registered

Retiree newsletter - Dec 2023

Resumed publishing of active member newsletter in September 2023

- First active member newsletter since 2021

Active member e-mail open rate averaged 49%

Retired member e-mail open rate averaged 38%

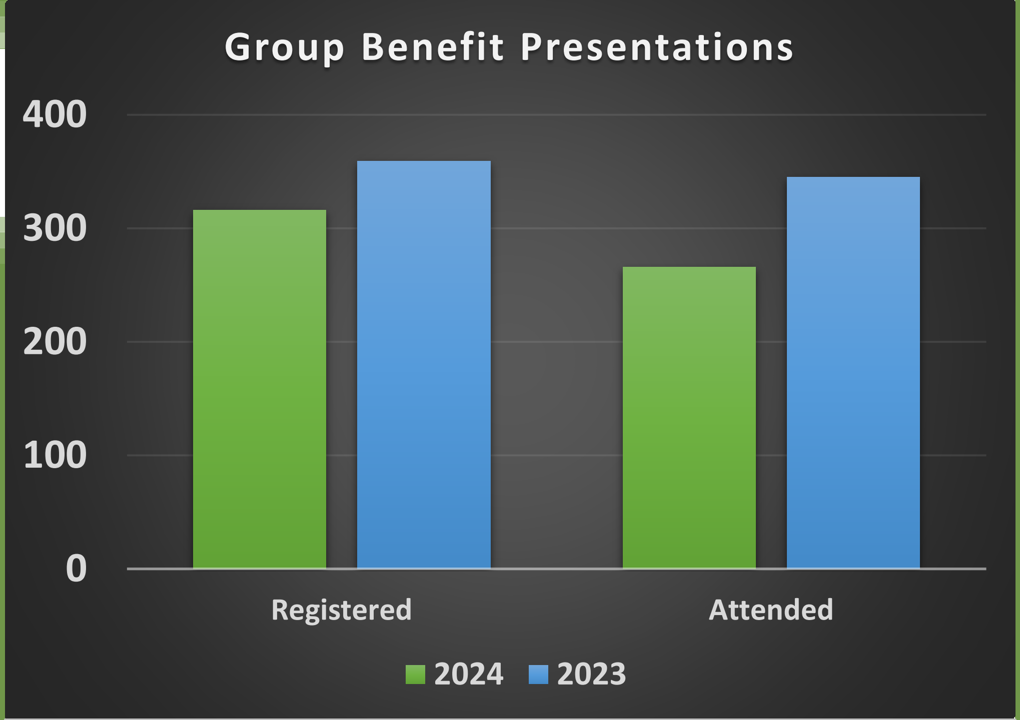
MEMBERSHIP PRESENTATIONS

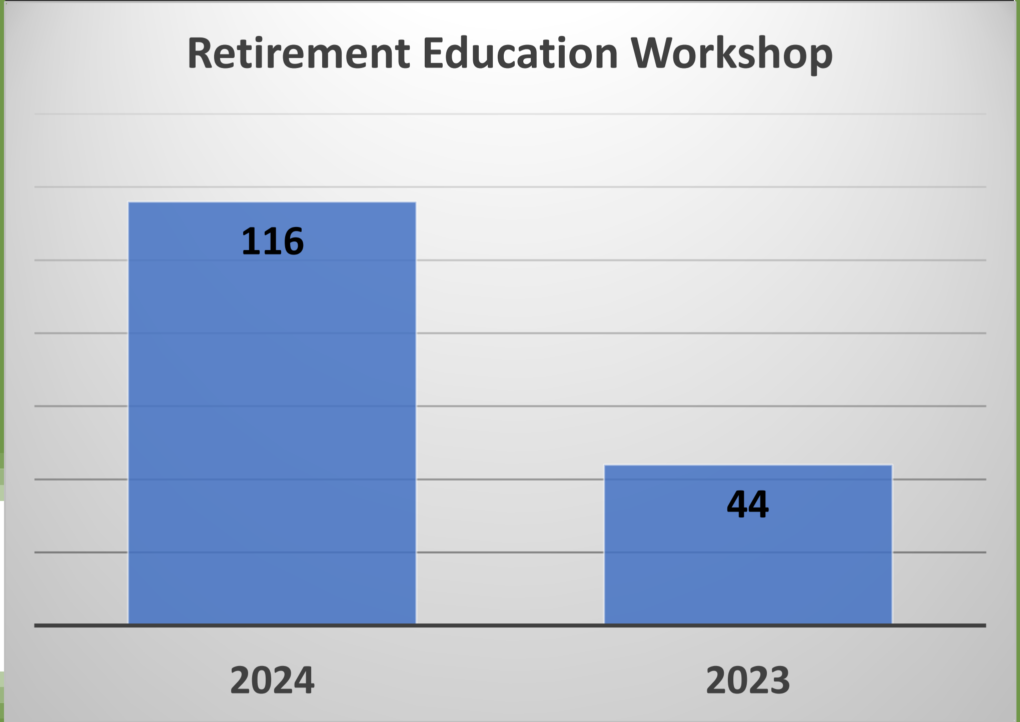
Group Presentations

- FY2023
  - 11 live presentations
  - 2 virtual presentations
  - 24% attended through virtual format
- FY2024
  - 9 live presentations
  - 1 virtual presentation
  - 22% attended virtually

Retirement Education Workshops

- FY2023
  - 1 live presentation
- FY2024
  - 1 live presentation
  - 1 virtual presentation
  - 53% attended virtually





BUSINESS PARTNER OUTREACH

Conferences as vendor
- Booth at NDCEL 2023
- Booth at NDSBA 2023
- Booth at Business Manager Association 2024
- Booth at NDCTE 2023

Conferences as presenter
- NDCEL 2023
- NDSBA 2023
- Business Manager Association 2024

Virtual info mixers for Business Partners
- 5 virtual sessions
- 408 attended total

3 issues of "Briefly" newsletter produced
- Oct 2023, Jan 2024, and May 2024

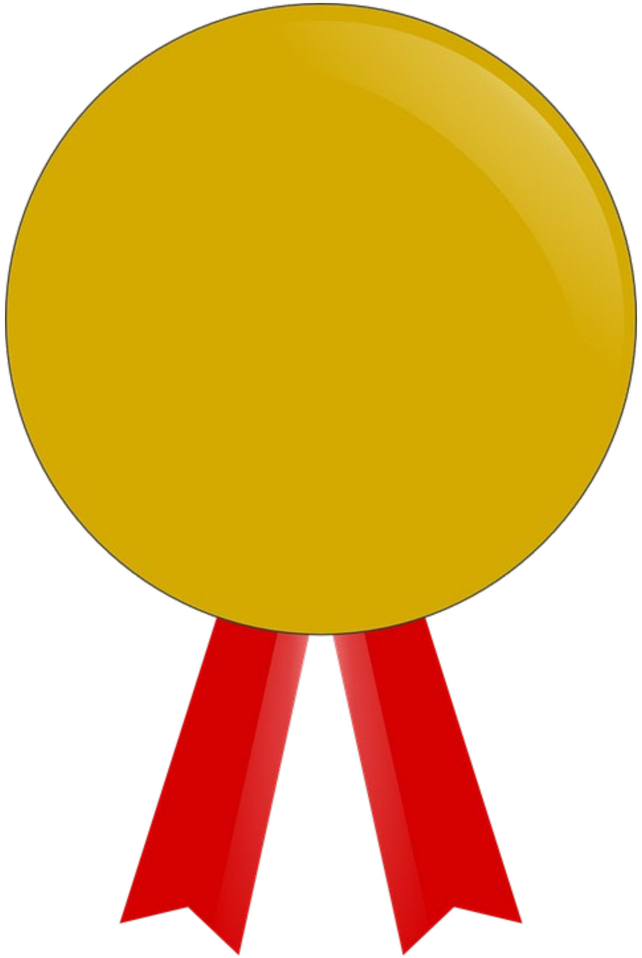
Audits and Awards

Retirement Services and Internal Audit continue collaborative efforts

- Internal Audit attends Retirement Services staff meetings
- Internal Audit is a member of the core PAS project team
- Internal Audit is assisting with the development of the compliance program

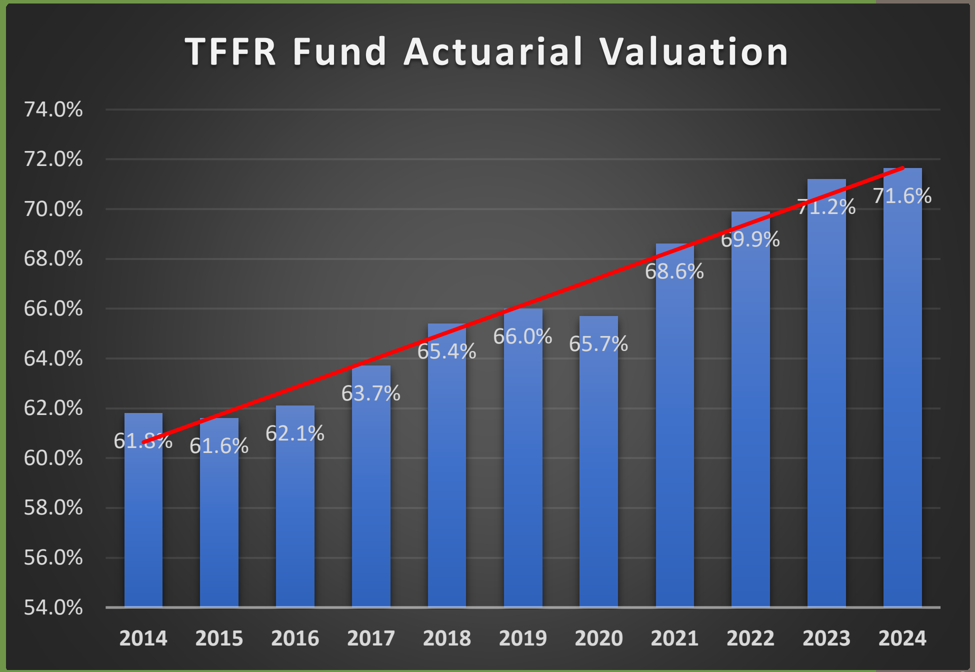
External auditors issued an unqualified opinion for FY2024

TFFR was awarded the 2024 Public Pension Standards Awards for Plan Funding and Plan Administration by the Public Pension Coordinating Council



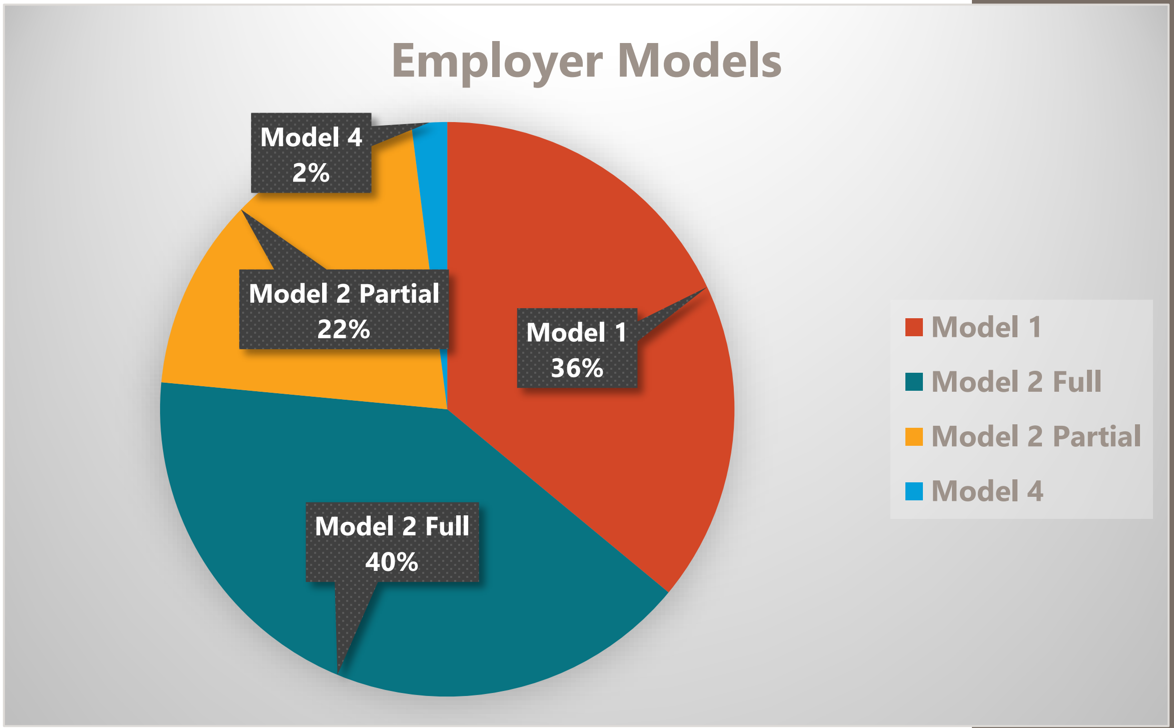
TRUST FUND MONITORING

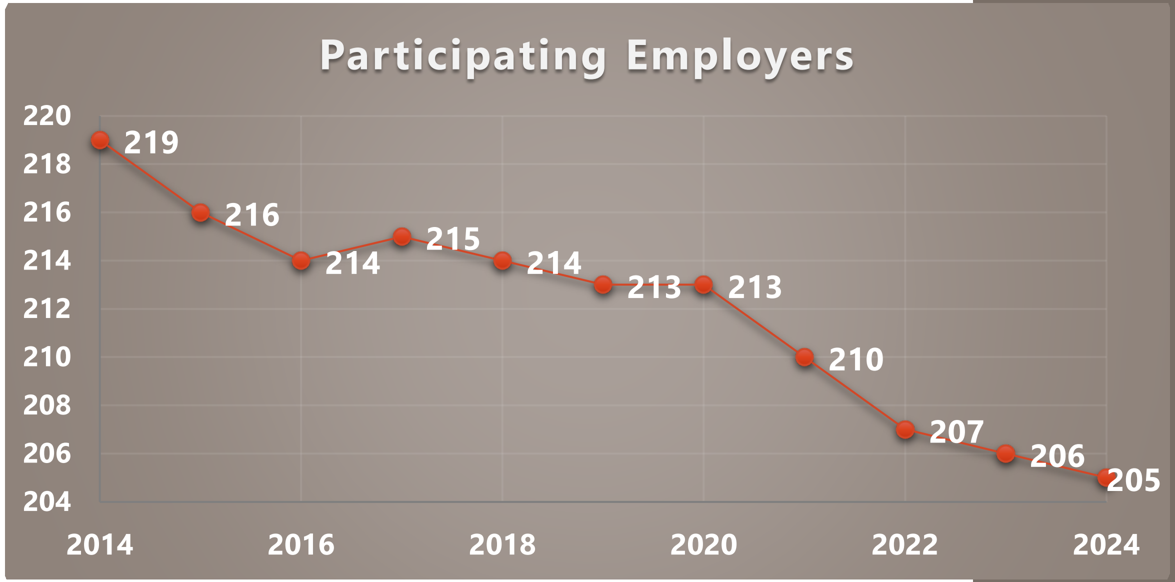
- **FY2024 valuation completed in October 2024**
  - AVB increased to 71.63% from 71.21%
  - ADC decreased to 12.46% from 12.50%
    - Still below current 12.75% contribution rate of employers
  - Effective funding period decreased to 19 years from 20 years
- **FY2023 Membership trends**
  - Active membership increased to 11,945 from 11,766
  - Average age increased to 41.3 from 41.2
  - Retirees increased to 8,603 from 8,567
  - Disabilities increased to 127 from 123
  - Total members increased to 25,663 from 25,102



EMPLOYER CONTRIBUTIONS AND REPORTING

- Employers contributed $108,087,909
  - An increase of 5.3% over FY2023
- Total employers decreased to 205 in FY2024 from 206 in FY2023
- 184 employers (89%) used the online portal for reporting
  - Slight uptick in usage over FY2023 (180)
- 14 employers changed their models
  - One changed from model 2 to model 1
  - One changed from model 0 to model 2





Exceptions to Operations

- RIO Staff completed the design phase of the pension administration system and began user acceptance testing
- Retirement education workshops were offered both virtually and in person
- The newly created position of Retirement Accountant was filled
- TFFR changed actuarial firms
- Scott Evanoff replaced Mel Olson on the TFFR Board
- A vacancy occurred in a Retirement Specialist Role and was filled with an internal candidate
- A vacancy occurred due to promotion in a full-time temporary position and was filled by an internal candidate

Takeaways

- Employer contributions increased
- No Model 0 employers any longer
- Increased business partner outreach through both frequency and methods
- Member portal usage continues to increase
- Member outreach participation continues to improve
- Regular pension, refund, and partial lump sum payments all increased
- Retirements decreased in FY2024
- Fund balance continues to improve
- Membership is increasing

RIO staff is doing a phenomenal job at ensuring the security of the TFFR Fund!


QUESTIONS
why
who
where
when
what
how

NORTH Dakota Be Legendary. | Retirement & Investment

MEMORANDUM

TO: SIB
FROM: Jan Murtha, Executive Director
DATE: November 20, 2024
RE: Executive Limitations

Ms. Murtha will present the 2024 RIO agency Gallup Engagement Survey results. She will also provide a verbal update regarding open and pending FTE’s and ongoing program activities.

Board Action Requested: Board acceptance.

Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2024

Presented to

North Dakota Teachers' Fund for Retirement

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle

Alan H. Winkle
Program Administrator

Employee Engagement

Q12+ Engagement Survey - trending - regular staff- October 2024

Oct 14, 2024 - Nov 04, 2024

Reporting Group: Direct | AGENCY - 19000

GALLUP

Q^{12} Mean

The Gallup Q^{12} score represents the average, combined score of the 12 elements that measure employee engagement. Each element has consistently been linked to better business outcomes.

ENGAGEMENT MEAN

TRENDED MEAN

Change From Last Mean: -0.05

4.06 | 4.22 | 4.42 | 4.55 | 4.50

MEAN PERCENTILE RANK

81

Database: Gallup Overall

RESPONDENTS

24

ENGAGEMENT INDEX

*

Gallup Q^{12} Items

Questions	Respondents	Current Mean	Last Mean	Change	Mean Percentile Rank - Gallup Overall	Company Overall Current Mean
Q00: On a five-point scale, where 5 means extremely satisfied and 1 means extremely dissatisfied, how satisfied are you with your agency as a place to work?	24	4.50	4.59	-0.09	79	3.90
Q01: I know what is expected of me at work.	24	4.42	4.55	-0.13	43	4.29
Q02: I have the materials and equipment I need to do my work right.	24	4.58	4.64	-0.06	75	4.13
Q03: At work, I have the opportunity to do what I do best every day.	24	4.29	4.29	0.00	57	4.05
Q04: In the last seven days, I have received recognition or praise for doing good work.	23	4.43	4.41	0.02	80	3.53
Q05: My manager, or someone at work, seems to care about me as a person.	23	4.74	4.82	-0.08	77	4.23
Q06: There is someone at work who encourages my development.	23	4.61	4.64	-0.03	82	3.95
Q07: At work, my opinions seem to count.	24	4.50	4.48	0.02	81	3.68
Q08: The mission or purpose of my agency makes me feel my job is important.	23	4.74	4.50	▲+0.24	86	4.08
Q09: My coworkers are committed to doing quality work.	24	4.58	4.73	-0.15	76	4.04
Q10: I have a best friend at work.	23	4.00	3.95	0.05	68	3.36
Q11: In the last six months, someone at work has talked to me about my progress.	24	4.50	4.71	▼ -0.21	74	3.83
Q12: This last year, I have had opportunities at work to learn and grow.	24	4.58	4.95	▼ -0.37	76	4.05

Gallup Q^{12} Items – Trended Details

Questions	Trended Mean	Past Report 4		Past Report 3		Past Report 2		Past Report 1		Current Report	
Q00: On a five-point scale, where 5 means extremely satisfied and 1 means extremely dissatisfied, how satisfied are you with your agency as a place to work?	3.69 | 4.00 | 4.17 | 4.59 | 4.50	3.69	16	4.00	12	4.17	12	4.59	22	4.50	24
Q01: I know what is expected of me at work.	4.06 | 4.08 | 4.25 | 4.55 | 4.42	4.06	16	4.08	12	4.25	12	4.55	22	4.42	24
Q02: I have the materials and equipment I need to do my work right.	4.31 | 4.33 | 4.33 | 4.64 | 4.58	4.31	16	4.33	12	4.33	12	4.64	22	4.58	24
Q03: At work, I have the opportunity to do what I do best every day.	4.00 | 3.92 | 4.17 | 4.29 | 4.29	4.00	16	3.92	12	4.17	12	4.29	21	4.29	24
Q04: In the last seven days, I have received recognition or praise for doing good work.	4.06 | 4.17 | 4.42 | 4.41 | 4.43	4.06	16	4.17	12	4.42	12	4.41	22	4.43	23
Q05: My manager, or someone at work, seems to care about me as a person.	4.19 | 4.58 | 4.92 | 4.82 | 4.74	4.19	16	4.58	12	4.92	12	4.82	22	4.74	23
Q06: There is someone at work who encourages my development.	4.00 | 4.17 | 4.42 | 4.64 | 4.61	4.00	16	4.17	12	4.42	12	4.64	22	4.61	23
Q07: At work, my opinions seem to count.	3.69 | 4.00 | 4.00 | 4.48 | 4.50	3.69	16	4.00	12	4.00	12	4.48	21	4.50	24
Q08: The mission or purpose of my agency makes me feel my job is important.	4.19 | 4.92 | 4.58 | 4.50 | 4.74	4.19	16	4.92	12	4.58	12	4.50	22	4.74	23
Q09: My coworkers are committed to doing quality work.	4.50 | 4.42 | 4.67 | 4.73 | 4.58	4.50	16	4.42	12	4.67	12	4.73	22	4.58	24
Q10: I have a best friend at work.	3.63 | 3.55 | 3.91 | 3.95 | 4.00	3.63	16	3.55	11	3.91	11	3.95	21	4.00	23
Q11: In the last six months, someone at work has talked to me about my progress.	3.94 | 4.08 | 4.58 | 4.71 | 4.50	3.94	16	4.08	12	4.58	12	4.71	21	4.50	24
Q12: This last year, I have had opportunities at work to learn and grow.	4.13 | 4.42 | 4.83 | 4.95 | 4.58	4.13	16	4.42	12	4.83	12	4.95	22	4.58	24

GALLUP

Basic Needs - What do I get?

Employees need to have a clear understanding of what excellence in their role looks like so they can be successful. Groups with high scores on the first element are more productive, cost-effective, creative and adaptive.

MEAN

4.50

TRENDED MEAN

Change From Last Mean: -0.09

4.19 | 4.21 | 4.29 | 4.59 | 4.50

MEAN PERCENTILE RANK

61

Database: Gallup Overall

RESPONDENTS

24

Questions	Respondents	Current Mean	Last Mean	Change	Mean Percentile Rank - Gallup Overall	Company Overall Current Mean
Q01: I know what is expected of me at work.	24	4.42	4.55	-0.13	43	4.29
Q02: I have the materials and equipment I need to do my work right.	24	4.58	4.64	-0.06	75	4.13

GALLUP

Individual - What do I give?

Employees want to know about their individual contributions and their worth to the organization. Manager support is especially important during this stage because managers typically define and reinforce value.

MEAN

4.52

TRENDED MEAN

Change From Last Mean: -0.02

4.06 | 4.21 | 4.48 | 4.54 | 4.52

MEAN PERCENTILE RANK

75

Database: Gallup Overall

RESPONDENTS

24

Questions	Respondents	Current Mean	Last Mean	Change	Mean Percentile Rank - Gallup Overall	Company Overall Current Mean
Q03: At work, I have the opportunity to do what I do best every day.	24	4.29	4.29	0.00	57	4.05
Q04: In the last seven days, I have received recognition or praise for doing good work.	23	4.43	4.41	0.02	80	3.53
Q05: My manager, or someone at work, seems to care about me as a person.	23	4.74	4.82	-0.08	77	4.23
Q06: There is someone at work who encourages my development.	23	4.61	4.64	-0.03	82	3.95

GALLUP

Teamwork - Do I belong here?

Employees need to feel like they belong and are a good fit with their team. They need to know they are part of something bigger than themselves. As a manager, encourage opportunities for teamwork and a sense of belonging.

MEAN

TRENDED MEAN

Change From Last Mean: 0.05

4.00 | 4.22 | 4.29 | 4.41 | 4.46

MEAN PERCENTILE RANK

76

Database: Gallup Overall

RESPONDENTS

24

Questions	Respondents	Current Mean	Last Mean	Change	Mean Percentile Rank - Gallup Overall	Company Overall Current Mean
Q07: At work, my opinions seem to count.	24	4.50	4.48	0.02	81	3.68
Q08: The mission or purpose of my agency makes me feel my job is important.	23	4.74	4.50	▲+0.24	86	4.08
Q09: My coworkers are committed to doing quality work.	24	4.58	4.73	-0.15	76	4.04
Q10: I have a best friend at work.	23	4.00	3.95	0.05	68	3.36

GALLUP

Growth - How can I grow?

Employees need to be challenged to learn something new and find better ways to do their jobs. They need to feel a sense of movement and progress as they mature in their roles.

MEAN

TRENDED MEAN

Change From Last Mean: -0.29

4.03 | 4.25 | 4.71 | 4.83 | 4.54

MEAN PERCENTILE RANK

75

Database: Gallup Overall

RESPONDENTS

24

Questions	Respondents	Current Mean	Last Mean	Change	Mean Percentile Rank - Gallup Overall	Company Overall Current Mean
Q11: In the last six months, someone at work has talked to me about my progress.	24	4.50	4.71	▼ -0.21	74	3.83
Q12: This last year, I have had opportunities at work to learn and grow.	24	4.58	4.95	▼ -0.37	76	4.05

Additional Questions

Questions	Respondents	Current Mean	Last Mean	Change	Mean Percentile Rank - Gallup Overall	Company Overall Current Mean
At work, I am treated with respect.	24	4.79	4.68	0.11	82	4.09
My agency cares about my overall wellbeing.	24	4.71	4.77	-0.06	86	3.82
I have received meaningful feedback in the last week.	22	4.32	4.32	0.00	71	3.51

*Sentiment Distribution is not available when n<50

Engagement Index

There is a powerful link between employees who are engaged in their jobs and the achievement of crucial business outcomes.

ENGAGEMENT INDEX RATIO

*

ENGAGEMENT INDEX

*

Engaged

Employees are highly involved in and enthusiastic about their work and workplace. They are psychological "owners", drive performance, innovation, and move the organization forward.

Not Engaged

Employees are essentially psychologically unattached to their work and company. Because their engagement needs are not being fully met, they're putting time – but not energy or passion – into their work.

Actively Disengaged

Employees aren't just unhappy at work – they are resentful that their needs are not being met and are busy acting out their unhappiness. Every day, these workers potentially undermine what their engaged coworkers accomplish.

Footnotes

Trended Report Details

	Report Name	Date
Current Report	Q12+ Engagement Survey - trending - regular staff- October 2024	Oct 14, 2024 - Nov 04, 2024
Past Report 1	Q12+ Engagement Survey - trending - Regular staff - October 2023	Oct 16, 2023 - Nov 06, 2023
Past Report 2	Q12 Engagement Survey - trending - Regular staff - October 2022	Oct 17, 2022 - Nov 07, 2022
Past Report 3	ND State EE Engagement Survey - trending - Oct. 2021	Oct 18, 2021 - Oct 31, 2021
Past Report 4	North Dakota State Employee Engagement Survey 2020	Nov 30, 2020 - Dec 15, 2020

* - Scores are not available due to data suppression.
Respondents can select multiple responses for multi-select questions.
Not shown if n < 4 for all Means, Top Box, and Verbatim Responses; n < 10 for Frequency; or data are unavailable.
Mean Percentile Rank is being calculated against other workgroup scores in the Gallup Overall database.
Meaningful change is represented by a green or red arrow if the score changes by 0.2 or more between survey periods.

Percentile Rank in Gallup Overall Database

< 25th Percentile   25-49th Percentile   50-74th Percentile   75-89th Percentile   >= 90th Percentile

*All text analytics are machine generated. Because we use machine learning to generate sentiments, results may not be 100% accurate.

*Percent Engaged available when n ≥ 30. All categories available when n ≥ 100.
* - Scores are not available due to data suppression. Respondents can select multiple responses for multi-select questions.

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MEMORANDUM

TO: TFFR
FROM: Jan Murtha, Executive Director
DATE: November 20, 2024
RE: TFFR Contract Reporting

As a result of changes to the SIB governance manual approved in May a contract reporting matrix was added to clarify the signing authority and reporting of all RIO agency contracts. Pursuant to this change the Executive Director is to submit quarterly reports to the TFFR Board regarding the below referenced expenses.

Retirement Outreach Agreements	5/17/2024 - 9/30/2024		
Venue/School District	**Execution Date**	**Description**	**Cost**
CTE	6/7/2024	Conference Exhibitor	$300.00
NDCEL	8/5/2024	Fall Conference Booth Sponsorship	$900.00
BPS Career Academy	8/15/2024	Group Benefit Presentation	None
NDSBA	9/6/2024	Exhibitor Booth	$800.00
McKenzie County Public School District	9/16/2024	Outreach Program Agreement	None
Minot Public Schools	9/24/2024	Outreach Program Agreement	None
Dickinson Public Schools	9/30/2024	Outreach Program Agreement	None

Business Partner Agreements	5/17/2024 - 9/30/2024

None

Legacy PAS Costs	5/17/2024 - 9/30/2024

None

Board Action Requested: Board acceptance.

NORTH Dakota | Retirement & Investment

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MEMORANDUM

TO: **TFFR**

FROM: **Chad R. Roberts, DED/CRO**

DATE: **November 14, 2024**

RE: **Board reading materials for November 2024 TFFR Board of Trustees**

Three suggested readings on pensions, retirements, and factors impacting retirement funds and retirees' retirements are attached.

The first suggested reading is an article from www.plansponsor.com. The article "*What Does Inflation's New Normal Mean for Public Pension Funds?"* published on October 14, 2024, provides insight into inflationary pressures on the public pension sector.

The second suggested reading is a November 14, 2024, article from Fedweek titled "*House Passes Bill to Repeal GPO, WEP; Fate in Senate Uncertain*" It provides a legislative update and background on the bill affecting public sector retirees.

The third suggested reading is from NCPERS published Summer of 2024. The article is "*The Unintended Consequences of Benefit-Tier-Related Pension Reforms*".

Board Action Requested: Information only

BENEFITS | October 14, 2024

What Does Inflation's New Normal Mean for Public Pension Funds?

Analysts consider how funds can afford cost-of-living adjustments to address the buying-power erosion that slow and steady cost increases can have on benefits.

Reported by BAILEY MCCANN

September's Federal Reserve interest rate cut was meant to signal a win in the battle against inflation. With the highest inflationary peak in decades behind us, there was palpable relief at the idea of rates coming down.

That may be especially true for public pension plan participants and plan sponsors. Over the past few years, more retiree groups have pushed for cost-of-living adjustments for their retirement benefits, as inflation eroded pension benefits. Some have been successful at getting ad hoc increases, but those wins have not been widespread, and they are not likely to be enough to contend with a future in which inflation rates hover within the 2% to 4% target range.

According to data from the Equable Institute's State of Pensions 2024, 878 state and local pension benefit classes lack inflation protection. Some of them have received recent ad hoc COLAs to help deal with this, but without government action, participants in these plans will see their benefits erode over time.

That reality is pushing some governments to reconsider how benefits are structured. But making a change to COLAs or plan structures in general—especially for public plans—is not easy. Underfunded plans may not have the money to institute a COLA, which is paid up front, and they may be wary of creating additional unfunded liabilities.

Calculated Guessing

What makes COLAs so challenging to implement?

If a plan is integrated with Social Security, the Social Security portion is fully indexed to inflation so plan participants get something, as seen last week, when the Social Security Administration announced a 2.5% COLA for beneficiaries in 2025. But when it comes to the plan itself, plan sponsors and actuaries are essentially making calculated guesses about what inflation is likely to be in the future. Once those estimates are acted upon, they are hard to correct.

"I started doing actuarial work in the late '90s, and we just kept getting more and more good news," says Dan Doonan, executive director of the National Institute on Retirement Security. "The market was going up, my plan's funding ratio kept going up, and it felt like we were on the right track. But then the Great Recession hit and caused a reevaluation. Many plans cut their COLAs in response to the drop in [interest] rates because it was an immediate cost savings, and now they are discovering that there are problems with that in today's environment."

Todd Tauzer, a senior vice president and actuary at Segal, says some pensions have accounted for this by using a strategy called COLA banking, whereby the COLA tracks inflation up to a cap, and anything over the cap gets banked. When inflation drops, the plan can draw from the bank to offer a COLA in lower-inflation years as a means of catching up.

Other plans have a COLA that was locked in at a lower rate and may not be fully indexed to current inflation levels. Some plans offer participants the option to self-fund a COLA via an annuity during retirement—but that can be expensive.

"Broadly speaking, the takeaway here is that plan sponsors generally look at COLAs as a means of helping to maintain purchasing power, but few of them offer a COLA that is going to keep that purchasing power at 100%, no matter what," Tauzer says.

Ad Hoc Options

Over the past few years, more plans have offered ad hoc COLAs in response to the spike in inflation. Ad hoc COLAs are typically one-time increases, although they can be repeated.

Retiree groups have had some measure of success with pressure campaigns to get an ad hoc COLA, but they have to be paid when they are issued, which means funding either needs to be set aside or a funding strategy must be put in place to cover the cost.

Alex Brown, a research manager at the National Association of State Retirement Administrators, says plans are getting better at doing these; they had a history of creating unfunded future liabilities. Still, they are not easy to issue during high-inflation periods.

"An ad hoc COLA typically requires legislative approval or investment board approval, and that can be hard to do," he says.

Curves Ahead

Looking ahead, if the U.S. settles into a 2% to 4% annual inflation rate, plan participants that do not have much in the way of inflation protection could see a material difference in the level of purchasing power provided by their benefits over time. This could be compounded for participants in newer classes of a pension plan, especially if that plan has taken steps to cut costs in the past.

Brown says many states have rules, laws or constitutional protections in place that any changes made to a retirement system can only be applied prospectively, rather than retroactively. That means there can be discrepancies between the benefits available to participants, depending on when they joined the plan. This helps the plan cut costs over time by accruing lower liabilities, but it can create headaches going forward.

Illinois is one example. A 2010 pension reform law cut the benefits for new classes so low that some participant advocacy groups say they are now below fiduciary suitability standards. Illinois Governor J.B. Pritzker has said that these rules need to change, but the system is underfunded, and changing those classes now would be a retroactive change. It is unclear where funding would come from or how any changes would be structured.

Other states, including Wyoming and Kentucky, have announced they will not add COLAs until the plan reaches a designated funding threshold. Brown notes that those plans are underfunded to such a level that "participants are unlikely to see much, if any, inflation protection for the foreseeable future."

COLAs are also at the center of an ongoing fight within the State Teachers Retirement System of Ohio. As CIO recently reported, STRS Ohio has been rocked by pressure from reformers to move many investments to index funds and increase the COLA. The fund had suspended COLAs between 2017 and 2022 as a result of significant unfunded liabilities. At the end of fiscal 2022, the pension funding ratio stood at 78.9%, and the plan reinstated the COLA without applying it to the years it was suspended. Both the governor and state supreme court have stepped in at various times during the fight, removing and reinstating trustees, and Aon, the retirement system's investment consultant, dropped the system as a client. The permanence of the COLA and the structure of the investment portfolio going forward are still very much in question.

Participants in all of these plans will have to lean on their investments and Social Security to maintain purchasing power. Doonan says that leaving it up to the participant ends up being the solution all too often.

"There's a lot of talk about plan sponsors reducing their risk, but the risk doesn't really get reduced—it just gets transferred," Doonan says.

Thursday, November 14th, 2024

Federal Employee Handbooks (/store)

Fedweek (/news/fedweek)

House Passes Bill to Repeal GPO, WEP; Fate in Senate Uncertain

Published: November 13, 2024 (https://www.fedweek.com/fedweek/house-schedules-vote-on-gpo-wep-repeal-bill/)
More in: Fedweek (https://www.fedweek.com/news/fedweek/)

View of the U.S. Capitol the day after the nation voted former President Donald Trump to become the 47th president, Wednesday, November 6, 2024. Image: Ken Cedeno/UPI/Shutterstock

By: FEDweek Staff (https://www.fedweek.com/about/)

UPDATED: The House has passed a bill (HR-82) to repeal the Social Security government pension offset and windfall elimination provision, the farthest the repeal effort has advanced over the four decades since those provisions became law.

The House vote was 327-75, more than enough to pass even under the special procedure used in the voting, under which amendments were not allowed but passage required a two-thirds vote rather than the usual simple majority.

The vote essentially was forced by backers of the bill who used a legislative maneuver called a discharge petition to bring the bill to a floor vote even though it had not been passed by the pertinent committee, Ways and Means. That requires a majority of the House to sign onto a request for a vote, which backers quickly achieved once they put it in motion.

The bill now moves to the Senate, where its fate is uncertain. A counterpart bill (S-597) there has 62 cosponsors—more than enough to overcome a potential filibuster—but it is unclear whether that chamber will call a vote before the current Congress ends. If it doesn't the process would have to start anew in January.

There is no counterpart maneuver in the Senate to compel a vote there, and Senate Democratic leaders have indicated that they will put highest priority on funding federal agencies beyond the December 20 end of current spending authority and confirming judges nominated by the Biden administration.

During the House floor debate, backers argued that repeal is long overdue and noted that the bill had the largest number of co-sponsors of any measure in the House.

The WEP reduces a Social Security benefit earned through employment covered that system of someone drawing a benefit from a retirement system that does not include it, such as CSRS and some state and local government retirement systems. The reduction, up to about $600 a month currently, is not as severe for those with at least 20 years of Social Security-covered earnings above an annual threshold (this year, $31,275) and is eliminated for those with 30 or more such years.

The GPO reduces Social Security spousal or survivor benefits by $2 for each $3 the beneficiary receives in an annuity from a retirement system that does not include Social Security. In many cases, the effect of the GPO is to eliminate a spousal or survivor Social Security benefit through a spouse's Social Security-covered employment.

Several members who spoke in opposition cited the recent CBO cost estimate showing that repeal would increase Social Security spending by $196 billion over 10 years. Several pushed for a bill that had been quickly scheduled as an alternative, HR-5342, which would have set a less punitive formula for the WEP and would not have addressed the GPO at all; that bill failed on a 175-225 vote.

The CBO estimate also said that enactment of the bill would advance by about six months the exhaustion of the Social Security trust fund, currently projected to occur in about 10 years, after which its ongoing income would cover only about 80 percent of currently projected benefits, leaving political leaders the choice of benefit cuts and/or payroll tax increases.

In a statement issued after the vote, main sponsors Reps. Abigail Spanberger, D-Va., and Garret Graves, R-La., said that “For more than 40 years, the Social Security trust funds have been artificially propped up by stolen benefits that millions of Americans paid for and that their families deserve. The long-term solvency of Social Security is an issue that Congress must address — but an issue that is wholly separate from allowing Virginians, Louisianans, and Americans across our country who did their part and contributed their earnings to retire with dignity.”

About half of current federal retirees are drawing benefits under CSRS, although only several percent of current federal employees are under that system, since the FERS program covers everyone first hired after 1983. Most of those affected by the reductions worked for state or local governments whose retirement systems likewise did not include Social Security.

The CBO estimate showed that repealing the WEP would increase Social Security benefits for those affected it by $360 a month on average at first, rising to an estimated $460 a month in 2033. Repeal of the GPO would increase benefits at first by an average of $700 a month for spouses and by an average of $1,190 for surviving spouses; in 2033, that would reach $860 and $1,520, respectively, it said.

The Unintended Consequences of Benefit-Tier-Related Pension Reforms

By: Jonathan Scarpa, Segal

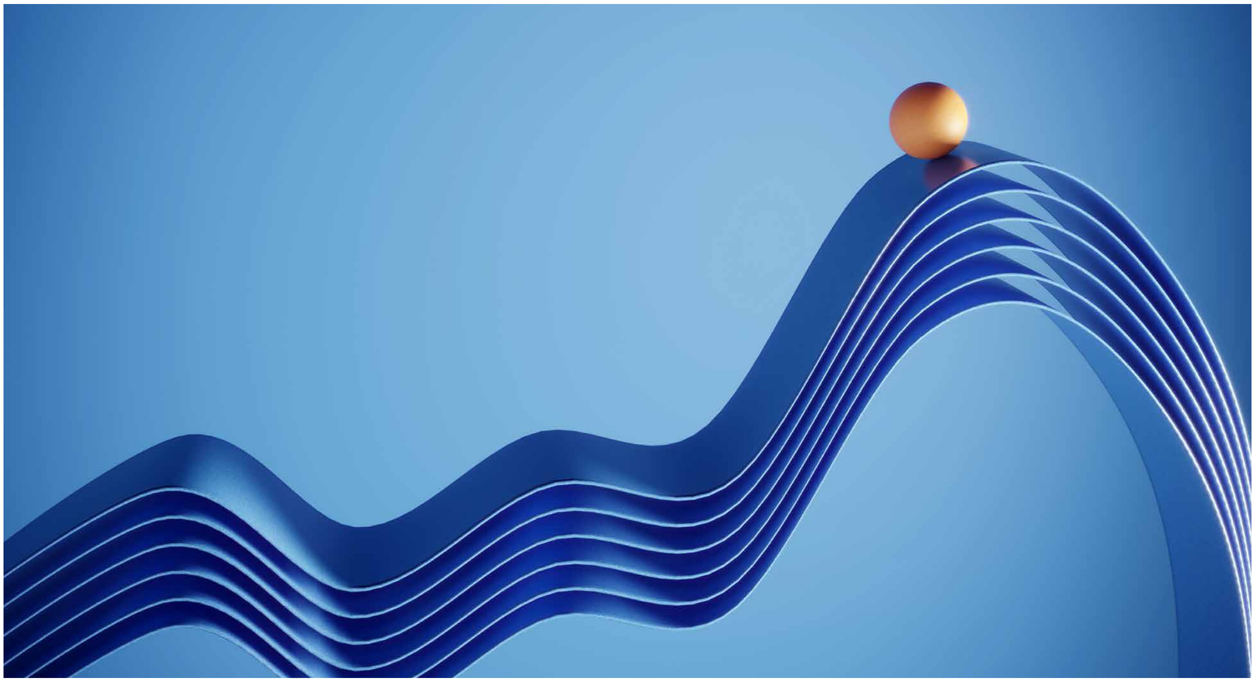

Photo Illustration © 2024, istock.com

In the wake of the global financial crisis of 2008 and 2009, many public pension plans adopted reforms intended to address rising pension costs and improve funded levels. One common approach was to create less valuable, lower-cost benefit tiers for new hires. Often, these new benefit tiers included some combination of adjusting retirement ages, the period of compensation in which a benefit is determined, and the benefit multiplier (the percent of salary replaced for each year of service).

Applicable for new hires, these changes alone did not reduce a plan's then-current unfunded liability. Rather, cost savings were expected to be realized over the long term as members of the new benefit tier gradually phased into the active population.

Backpedaling on reform

Fast-forward fifteen years and we have seen increasing pressure to reverse the benefit reforms. Some plans have already done so, while others are proposing legislation or at least considering it.

At the time of enactment, it was clear these changes would reduce member benefits. What may not have been as clear was the influence the changes would have on employee behavior and morale as well as the resulting broader impact.

The most critical point to remember is the historical value public employees place on retirement benefits. Those benefits are an essential component of their working career. And the importance of defined benefit plans is not limited to employees. For employers, the plans and their individual provisions represent valuable attraction, retention, and workforce-management tools.

Multiple layers of impact from reform

On the surface, descriptions of benefit tier reductions do not always capture the true impact on members. Digging deeper to quantify the impact helps to illustrate why these changes can influence employee behavior in unexpected ways.

Consider a sample plan that increased the final average compensation period from three to five years and decreased the benefit multiplier from 1.75% to 1.50% per year of service. For a member of the new tier entering the plan at age 30 and retiring at age 65, the percentage of salary replaced at retirement decreases from 59% to 50%.

However, this example does not consider a potential elimination in benefit subsidies prior to normal retirement age. Changes like this were common and can exaggerate the difference highlighted above. To illustrate this, consider the same plan that also added a modest 3% reduction in benefits per year of retirement below age 65 for the new benefit tier. In this scenario, the same member retiring at age 60 would have a decrease in the percent of salary replaced at retirement from 51% to 36%.

Understanding the full picture

These examples highlight the material loss in benefits for a career public employee. If a public employee were to remain in the system, they must supplement their retirement income with personal savings to close the gap, delay retirement, or do both. Considering the value public employees place on retirement benefits, this situation can create a negative impact on morale. This drop in morale is a partial motivation for the push from public employee organizations to reverse the reforms implemented years ago. The timing of this trend, a decade or more after reforms, is relevant because members in the newer, less generous tiers represent an increasingly larger percentage of the working population.

Alternatively, members may be incentivized to leave the plan for either a similar public job that provides a more attractive benefit or the private sector. Numerous recent studies have shown increased member turnover among plans that have implemented significant benefit reductions, highlighting a direct link between benefit levels and employee behavior.

There are several outcomes of high attrition felt by the employer, the public, or both. When a member leaves employment, an employer must allocate resources to hire and train new employees. Attracting new employees may prove to be difficult given the less-attractive benefit levels. Higher attrition also results in a less-experienced workforce and may contribute to a loss in the quality of public services. This may be especially true in industries where a significant amount of expertise is required, like public safety employees and teachers.

Finding the balance

The balance between benefit levels and the cost of funding them is delicate. The reforms adopted over a decade ago were intended to manage the cost of public pensions. However, in retrospect, the unintended consequences of benefit-tier-related changes on employee behavior, morale and the public plan environment require understanding and consideration. ◆

Jonathan Scarpa, FSA, MAAA, EA *is a Vice President and Consulting Actuary in Segal's New York Office, where he works with statewide and local public retirement systems. His responsibilities include presenting to boards of trustees and other audiences, reviewing actuarial valuations, conducting experience studies and managing special projects for public sector retirement systems. Examples of special projects include analyzing benefit design changes, evaluating legislative proposals and helping clients navigate complex funding and solvency issues. Mr. Scarpa is a member of Segal's New York Region Experience Study Committee and Segal's Public Plan Report Committee that ensures valuation reports meet client needs and adhere to actuarial standards.*

North Dakota Teachers' Fund for Retirement

ACTUARIAL VALUATION REPORT AS OF

July 1, 2024

P: 720.274.7270 | www.grsconsulting.com

October 1, 2024

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

Re: Actuarial Valuation of the North Dakota Teachers' Fund for Retirement as of July 1, 2024

Dear Trustees:

We are pleased to provide our formal annual Actuarial Valuation Report as of July 1, 2024, for the North Dakota Teachers' Fund for Retirement ("NDTFFR"). This report was prepared at the request of the Board and is intended for use by NDTFFR and those designated or approved by the Board. This report may be provided to parties other than NDTFFR only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the funding progress of NDTFFR, to determine the actuarially determined employer contribution rate for the Plan Year commencing July 1, 2024, analyze changes in this rate and determine the sufficiency of statutory contribution rates. In addition, the report provides various summaries of the data. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different. Accounting information for purposes of complying with Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 is provided in separate reports.

Financing Objectives

The current member and employer contribution rates of 11.75% and 12.75%, respectively, are in accordance with those established in Section 15-39.1-09 of the North Dakota century Code. These rates are expected to remain in effect until NDTFFR is 100% funded on an actuarial basis. The member and employer rates will revert to the 7.75% rate established in 1997 once NDTFFR is 100% funded on an actuarial basis.

Per Board objectives, the combined member and employer contributions are intended to be sufficient to pay the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over a period of 19 years beginning July 1, 2024.

Progress Toward Realization of Financing Objectives

Based on the current valuation, the contribution rates are expected to fully fund NDTFFR in 2043, and as such, **the current Member and Employer contribution rates are expected to be sufficient to meet the Board financing objectives.**

The net employer Actuarially Determined Contribution (ADC) as a percentage of pay for the year beginning July 1, 2024 is 12.46%. The expected employer contribution is 12.75% of pay which creates a contribution surplus of 0.29% of pay. The ADC based on the prior valuation was 12.50%. The ADC decreased due to total payroll greater than expected which decreases the amortization of the unfunded liability as a rate of pay.

The funded ratio (ratio of the actuarial value of assets to the actuarial accrued liability) on an actuarial value of assets basis increased from 71.21% to 71.63% and increased on a fair value basis from 69.34% to 70.42%.

Benefit Provisions

All of the benefit provisions reflected in this valuation are those which were in effect on July 1, 2024. There have been no material changes to the benefit provisions since the prior report. The benefit provisions are summarized in Section F of this Report.

Assumptions and Methods

The assumptions and methods used in this valuation are those that were adopted by the Board in March 2020, first effective in the July 1, 2020 valuation. The assumptions and methods are detailed in Section I of this Report. The Board has sole authority to determine the actuarial assumptions used for NDTFFR. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice and are expected to have no significant bias.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on NDTFFR's funded status); and changes in plan provisions or applicable law. The actuarial calculations presented in this report are intended to provide information for rational decision making.

Data

The findings in this report are based on data and other information through July 1, 2024. The valuation was based upon information furnished by the North Dakota Teachers' Fund for Retirement staff, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by North Dakota Teachers' Fund for Retirement staff.

Other Disclosures

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed. This report was prepared using our proprietary valuation model which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Certification

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the North Dakota Teachers' Fund for Retirement as of the valuation date. 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.

The signing actuaries are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation and Report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

Gabriel, Roeder, Smith & Company

Dana Woolfrey

Dana Woolfrey, FSA, EA, FCA, MAAA
Senior Consultant

Paul T Wood

Paul Wood, ASA, FCA, MAAA
Senior Consultant and Team Leader

Krysti Kiesel

Krysti Kiesel, ASA, MAAA
Consultant

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SECTION A

EXECUTIVE SUMMARY

Comments of the Actuarial Valuation

Purpose

Valuations are prepared annually, as of July 1 of each year. The purposes of the valuation are to measure the funding progress of NDTFFR, to determine the actuarially determined employer contribution rate for the Plan Year commencing July 1, 2024, analyze changes in this rate and determine the sufficiency of statutory contribution rates.

In addition, the report provides summaries of the member data, financial data, plan provisions, and actuarial assumptions and methods.

Financing Objectives

The North Dakota Teachers' Fund for Retirement is supported by member contributions, employer contributions and net earnings on the investment of the fund. Contribution rates are set by statute, and are currently 11.75% and 12.75%, respectively, for the members and employers. Per Board objectives, the combined member and employer contributions are intended to be sufficient to pay the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over a period of 19 years beginning July 1, 2024. If the contributions made are equal to the ADC, and if all actuarial assumptions are met, there will not be an unfunded accrued liability at the end of the 19-year period. Accordingly, the Actuarially Determined Contribution under the Board funding policy can be considered a "Reasonable Actuarially Determined Contribution" as required by the Actuarial Standards of Practice.

Based on the current valuation, the contribution rates are expected to fully fund NDTFFR in 2043, and as such, **the current Member and Employer contribution rates are expected to be sufficient to meet the Board financing objectives.**

Assumption Changes

There were no changes to assumptions since the prior valuation. The assumptions are summarized in Section I of the report.

Benefit Provisions

There were no material changes to benefit provisions since the prior valuation. The benefit provisions are summarized in Section F of the report.

Experience During the Year

Demographic experience

The plan experienced a liability loss of $32.4 million during fiscal year 2024. Details on the liability loss can be found on page 8.

Salary increases more than expected created liability losses of $19 million. These liability losses decreased the funded ratio and increased the unfunded liability as of July 1, 2024. However, the gain of contributions from this higher pay will increase the funded ratio and decrease the unfunded liability over time such that the change to long-term funding trajectory is minimal.

Active counts increased from 11,766 to 11,945 and total payroll increased by 6.9% which is more than the expected 3.25% payroll growth. This puts downward pressure on the amortization of the unfunded liability as a percentage of pay.

Asset experience

On a fair value basis, NDTFFR assets had an investment return of approximately 7.9 percent (net of investment expenses). On an actuarial value of asset basis, NDTFFR assets had an investment return of approximately 6.9 percent, which compares to the assumed rate of return of 7.25 percent. As of July 1, 2024, the amount of outstanding asset losses not yet recognized in the actuarial value of assets was $57.5 million, down from $85.6 million the prior year. The net asset losses currently being deferred will be phased into the actuarial value of assets over the next four years and will put adverse pressure on the results in coming years.

The plan experienced an actuarial asset loss of $12.8 million during fiscal year ending 2024. This loss was due to the actuarial value of assets earning a return less than the assumed 7.25%.

Financial Position and Summary of Results

Primary Results

The funded ratio (ratio of the actuarial value of assets to the actuarial accrued liability) on an actuarial value of assets basis increased from July 1, 2023 to July 1, 2024 from 71.21% to 71.63% despite the losses noted above.

The net employer Actuarially Determined Contribution (ADC) as a percentage of pay for the year beginning July 1, 2024 decreased from 12.50% as of the prior valuation to 12.46%. The expected employer contribution is 12.75% of pay which creates a contribution surplus of 0.29% of pay. The ADC decreased due to total contributory payroll more than expected which decreases the amortization of the unfunded liability as a rate of pay.

Due to funding progress based on the funding policy, the effective amortization period, or time until full funding, decreased from 20 years to 19 years.

Fair Value Results

Due to the deferred investment losses in the smoothed assets used, the results using the fair value of assets are slightly less favorable. The funded ratio on a fair value basis as of July 1, 2024 is 70.42%. Without investment recovery, these investment losses will put adverse pressure on future valuation results.

Summary of Actuarial Valuation Results

	July 1, 2024	July 1, 2023
1. Statutory Contributions (% of payroll):		
a. Member Contribution Rate	11.75%	11.75%
b. Employer Contribution Rate	12.75%	12.75%
c. Actuarially Determined Contribution Rate	12.46%	12.50%
d. Margin Available [Contribution Shortfall/(Surplus)]	(0.29)%	(0.25)%
e. Effective Funding Period	19 years	20 years
2. Funded Status		
a. Actuarial Accrued Liability	$ 4,758,417,607	$ 4,577,220,667
b. Actuarial Value of Assets (AVA)	3,408,483,045	3,259,558,143
c. Unfunded Liability (AVA-basis)	1,349,934,562	1,317,662,524
d. Funded Ratio (AVA-basis)	71.6%	71.2%
e. Return on AVA	6.9%	6.3%
f. Fair Value of Assets (FVA)	$ 3,351,007,841	$ 3,173,908,455
g. Unfunded Liability (FVA-basis)	1,407,409,766	1,403,312,212
h. Funded Ratio (FVA-basis)	70.4%	69.3%
i. Return on FVA	7.9%	7.3%
j. Ratio of Actuarial Value of Assets to Fair Value of Assets	101.7%	102.7%
3. Summary of Census Data		
a. Actives		
i. Total Active Count	11,945	11,766
ii. Total Annual Compensation	$ 831,008,910	$ 777,724,718
iii. Average Projected Compensation	69,570	66,099
iv. Average Age	41.3	41.2
v. Average Service	11.3	11.3
b. Members with Refunds Due	1,878	1,711
c. Deferred Vested Member Counts	2,147	2,010
d. Retiree Counts	8,603	8,567
e. Beneficiary and Alternate Payee Counts	963	925
f. Disability Counts	127	123
g. Total Members Included in Valuation	25,663	25,102

The funded ratio may not be appropriate for assessing the need for future contributions. The funded ratio is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

SECTION B

VALUATION RESULTS

Exhibit B.1
Actuarial Accrued Liability

	July 1, 2024	July 1, 2023
1. Active Members		
a. Retirement Benefits	$ 1,748,416,839	$ 1,640,072,036
b. Withdrawal Benefits	(5,473,805)	(1,065,446)
c. Disability Benefits	28,252,609	26,114,035
d. Death Benefits	21,933,447	20,580,333
e. Total	$ 1,793,129,090	$ 1,685,700,958
2. Members with Deferred Benefits	$ 187,322,276	$ 158,074,152
3. Members with Refunds Due	$ 28,847,776	$ 23,291,800
4. Members Receiving Benefits	$ 2,749,118,465	$ 2,710,153,757
5. Total	$ 4,758,417,607	$ 4,577,220,667
6. Actuarial Value of Assets	$ 3,408,483,045	$ 3,259,558,143
7. Unfunded Actuarial Accrued Liability	$ 1,349,934,562	$ 1,317,662,524

Exhibit B.2
Normal Cost for Fiscal Year Ending July 1, 2025

	July 1, 2024	July 1, 2023
1. Dollar Normal Cost		
a. Retirement Benefits	$ 86,468,869	$ 80,978,491
b. Withdrawal Benefits	17,830,306	16,518,508
c. Disability Benefits	2,047,826	1,910,331
d. Death Benefits	1,555,577	1,461,890
e. Total	$ 107,902,578	$ 100,869,220
2. Normal Cost as a Percentage of Pay	12.27%	12.26%
3. Projected Payroll	$ 879,276,401	$ 823,019,784

Exhibit B.3
Present Value of Projected Benefits

	July 1, 2024	July 1, 2023
1. Active Members		
a. Retirement Benefits	$ 2,726,358,934	$ 2,555,445,401
b. Withdrawal Benefits	217,080,927	205,298,168
c. Disability Benefits	52,216,226	48,523,838
d. Death Benefits	39,411,062	37,044,118
e. Total	$ 3,035,067,149	$ 2,846,311,525
2. Members with Deferred Benefits	$ 187,322,276	$ 158,074,152
3. Members with Refunds Due	$ 28,847,776	$ 23,291,800
4. Members Receiving Benefits		
a. Healthy Retirees	$ 2,597,576,918	$ 2,568,683,530
b. Disabled Retirees	19,492,929	17,806,091
c. Beneficiaries	132,048,618	123,664,136
d. Total	$ 2,749,118,465	$ 2,710,153,757
5. Total	$ 6,000,355,666	$ 5,737,831,234

Exhibit B.4
Development of the Actuarially Determined Contribution

	July 1, 2024		July 1, 2023	
	Dollar	**Percent of Pay**	**Dollar**	**Percent of Pay**
1. Total Normal Cost	$ 107,902,578	12.27%	$ 100,869,219	12.26%
2. Amortization of Unfunded Actuarial Liability	101,359,283	11.53%	95,570,065	11.61%
3. Assumed Administrative Expenses	3,585,808	0.41%	3,129,790	0.38%
4. Total Actuarially Determined Contribution (ADC)	$ 212,847,669	24.21%	$ 199,569,074	24.25%
5. Estimated Member Contribution	103,314,977	11.75%	96,704,825	11.75%
6. Actuarially Determined Employer Contribution	$ 109,532,692	12.46%	$ 102,864,249	12.50%
7. Estimated Employer Contribution	112,107,741	12.75%	104,935,022	12.75%
8. Contribution Shortfall/(Surplus)	$ (2,575,049)	(0.29)%	$ (2,070,773)	(0.25)%
9. Effective Funding Period	19 years		20 years	
10. Total Payroll supplied by the System, annualized	$ 831,008,910		$ 777,724,718	
11. Annual Projected Payroll for Upcoming Year	$ 879,276,401		$ 823,019,784	

Exhibit B.5
Plan Experience for Fiscal Year 2024

Liabilities	
1. Actuarial Accrued Liability at July 1, 2023	$ 4,577,220,667
2. Normal Cost during Fiscal Year 2024	100,869,220
3. Benefit Payments during Fiscal Year 2024	277,660,534
4. Interest on Items 1-3 to End of Year	325,551,942
5. Change in Actuarial Accrued Liability Due to Assumption Changes	0
6. Change in Actuarial Accrued Liability Due to Provision Changes	0
7. Expected Actuarial Accrued Liability at July 1, 2024	4,725,981,295
8. Actual Actuarial Accrued Liability at July 1, 2024	4,758,417,607
9. Liability (Gain)/Loss	32,436,312
Assets	
10. Actuarial Value of Assets at July 1, 2023	$ 3,259,558,143
11. Benefit Payments and Administrative Expenses during Fiscal Year 2024	280,973,307
12. Contributions during Fiscal Year 2024	208,981,973
13. Interest on Items 10-12 to End of Year	233,753,939
14. Expected Actuarial Value of Assets at July 1, 2024	3,421,320,748
15. Actual Actuarial Value of Assets at July 1, 2024	3,408,483,045
16. Total Asset (Gain)/Loss	12,837,703
Total	
17. Total (Gain)/Loss [9. + 16.]	**$ 45,274,015**

Exhibit B.6
Plan Experience for Fiscal Year 2024
(Gain)/Loss by Source

1. Liability (Gain)/Loss		
a. Salary (Gain)/Loss	$	19,380,468
b. New Members and Rehire (Gain)/Loss		8,973,615
c. Withdrawal (Gain)/Loss		(5,161,087)
d. Retirement (Gain)/Loss		3,503,211
e. Annuitant Mortality (Gain)/Loss		4,308,042
f. Other Demographic (Gain)/Loss		1,432,063
g. Total		32,436,312
2. Asset (Gain)/Loss	$	12,837,703
3. Total (Gain)/Loss	**$**	**45,274,015**

Exhibit B.7
Reconciliation of Actuarially Determined Contribution

	July 1, 2024	July 1, 2023
1. Actuarially Determined Contribution at Prior Valuation	12.50%	12.12%
2. Increases/(Decreases) Due to:		
a. Effect of Change in Covered Payroll and Normal Cost	(0.39)%	0.16%
b. Effect of Contributions (more)/less than ADC	(0.08)%	(0.04)%
c. Effect of Gains and Losses on AAL and Administrative Expenses	0.32%	(0.14)%
d. Effect of Investment (Gain)/Loss	0.11%	0.27%
e. Effect of Legislative Changes	0.00%	0.00%
f. Effect of Change in Actuarial Assumptions	0.00%	0.00%
g. Effect of Change in Valuation System	0.00%	0.13%
h. Net Effect of Other Changes	(0.00)%	(0.00)%
i. Total Change	(0.04)%	0.38%
3. Actuarially Determined Contribution at Current Valuation	12.46%	12.50%
4. Statutory Employper Contribution Rate	12.75%	12.75%
5. Contribution Rate Shortfall/(Surplus)	(0.29)%	(0.25)%

SECTION C

PLAN ASSETS

Statement of Fiduciary Net Position

Exhibit C.1
Statement of Plan Net Assets

	June 30, 2024	June 30, 2023
1. Cash and Cash Equivalents	$ 35,869,526	$ 26,543,393
2. Investments:		
a. Equities	$ 1,842,466,840	$ 1,765,727,972
b. Debt	877,328,837	785,396,084
c. Real Assets	519,442,836	550,692,368
d. Invested Cash	43,215,803	11,465,710
e. Total Investments at Fair Value	$ 3,282,454,316	$ 3,113,282,134
3. Accounts Receivable	$ 39,722,125	$ 40,829,685
4. Total Assets [1. + 2.e. + 3.]	$ 3,358,045,967	$ 3,180,655,212
5. Accounts Payable	$ 7,038,126	$ 6,746,757
6. Net Assets at Fair Value [4. - 5.]	$ 3,351,007,841	$ 3,173,908,455

Exhibit C.2
Statement of Changes in Plan Net Assets

	Year Ended June 30, 2024	Year Ended June 30, 2023
1. Fair Value of Assets at the Beginning of Year	$ 3,173,908,455	$ 3,023,920,243
2. Contributions		
a. Employer Contributions	$ 108,087,909	$ 102,307,888
b. Employee Contributions	99,610,414	94,283,739
c. Other Contributions	1,283,650	1,098,198
d. Less Administrative Expense	(3,312,773)	(2,891,047)
e. Net Contribution Income	$ 205,669,200	$ 194,798,778
3. Investment Income		
a. Interest, Dividends, and Other Income	$ 52,287,673	$ 49,646,004
b. Net Appreciation in Fair Value of Investments	203,096,798	175,293,526
c. Less Investment expense	(6,293,751)	(7,468,043)
d. Net investment income	$ 249,090,720	$ 217,471,487
4. Benefit payments		
a. Refunds	$ 12,225,640	$ 7,920,125
b. Regular Benefits	264,450,311	253,704,476
c. Partial Lump Sum	984,583	657,452
d. Net Benefit Payments	$ 277,660,534	$ 262,282,053
5. Change in Net Assets [2.e. + 3.d. - 4.d.]	$ 177,099,386	$ 149,988,212
6. Fair Value of Assets at the End of Year [1. + 5.]	$ 3,351,007,841	$ 3,173,908,455

Exhibit C.3
Development of the Actuarial Value of Assets

		Year Ending June 30, 2024
1. Actuarial Value of Assets, Beginning of Year	$	3,259,558,143
2. Fair Value of Assets, Beginning of Year	$	3,173,908,455
3. Fair Value of Assets, End of Year	$	3,351,007,841
4. Net Cash Flow		
a. Contributions	$	208,981,973
b. Benefit Payments		(265,434,894)
c. Refunds		(12,225,640)
d. Administrative Expenses		(3,312,773)
e. Net Cash Flow	$	(71,991,334)
5. Expected Return on Fair Value of Assets [2.* 7.25% + 4.e.* (1+7.25%)^0.5-1]	$	227,544,337
6. Actual Return	$	249,090,720
7. Excess return [6. - 5.]	$	21,546,383

8. Recognition of Gains/(Losses)

	Year Ended June 30,	Gain/(Loss)	Percent Deferred	Amount Deferred
a.	2024	$ 21,546,383	80%	$ 17,237,106
b.	2023	640,737	60%	384,442
c.	2022	(434,694,288)	40%	(173,877,715)
d.	2021	493,904,813	20%	98,780,963
e.	2020	(114,538,151)	0%	0
f.	Total Recognition			$ (57,475,204)

9. Actuarial Value of Assets, End of Year		
a. Preliminary Actuarial Value of Assets [3. - 8.f.]	$	3,408,483,045
b. Lower Corridor Limit [80% * 3.]		2,680,806,273
c. Upper Corridor Limit [120% * 3.]		4,021,209,409
d. Actuarial Value of Assets, End of Year		3,408,483,045
10. Estimated Rate of Return		6.9%
11. Ratio of Actuarial to Fair Value of Assets		101.7%

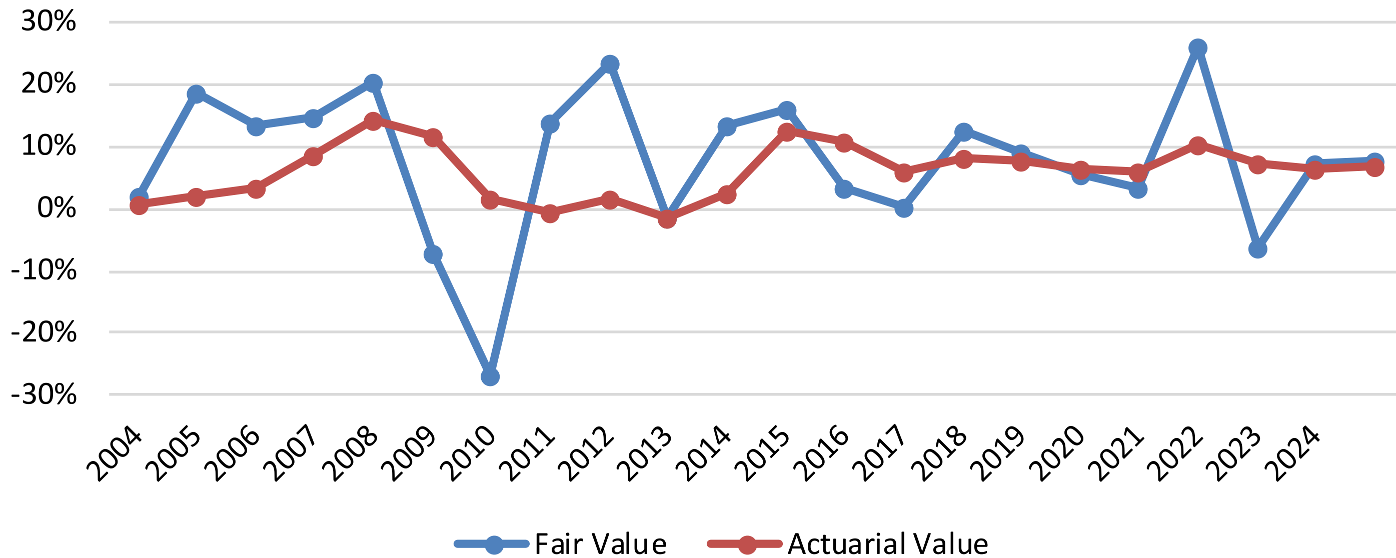
Exhibit C.4
History of Investment Returns

Year Ended June 30	Fair Value	Actuarial Value
1994	1.2%	7.0%
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%
2015	3.5%	10.7%
2016	0.4%	6.2%
2017	12.6%	8.2%
2018	9.0%	7.9%
2019	5.4%	6.4%
2020	3.3%	6.2%
2021	26.1%	10.3%
2022	(6.1)%	7.4%
2023	7.3%	6.3%
2024	7.9%	6.9%

Average Returns:	Fair Value	Actuarial Value
Last 5 Years	7.2%	7.4%
Last 10 Years	6.7%	7.6%
Last 15 Years	8.7%	6.0%
Last 20 Years	6.7%	6.5%
Last 30 Years	7.3%	7.1%

Investment returns prior to year ended June 30, 2023 were calculated by the prior actuary.

Exhibit C.5
Fair Value and Actuarial Value Rates of Return



SECTION D

PROJECTIONS AND RISK ANALYSIS

Exhibit D.1
Deterministic Projection of the Unfunded Liability
$ in Millions

As of July 1, (a)	Payroll For Next FY (b)	Contribution as % of Payroll (c)	Normal Cost and Admin as % of Payroll (d)	Net Amortization [c - d] * b (e)	UAAL BOY (f)	Interest (g)	Net Principal Contribution e - g (h)	Funding Period (i)
2024	$879	24.50%	12.68%	$104	$1,350	$94	$10	19
2025	908	24.50%	12.67%	107	1,340	93	14	18
2026	937	24.50%	12.66%	111	1,326	92	19	17
2027	968	24.50%	12.66%	115	1,307	91	24	16
2028	999	24.50%	12.65%	118	1,283	89	30	15
2029	1,032	24.50%	12.64%	122	1,254	87	36	14
2030	1,065	24.50%	12.64%	126	1,218	84	43	13
2031	1,100	24.50%	12.63%	131	1,175	81	50	12
2032	1,136	24.50%	12.63%	135	1,126	77	58	11
2033	1,173	24.50%	12.63%	139	1,068	72	67	10
2034	1,211	24.50%	12.62%	144	1,001	67	76	9
2035	1,250	24.50%	12.62%	149	924	62	87	8
2036	1,291	24.50%	12.61%	153	838	55	98	7
2037	1,333	24.50%	12.61%	158	739	48	110	6
2038	1,376	24.50%	12.61%	164	629	40	124	5
2039	1,421	24.50%	12.60%	169	505	31	138	4
2040	1,467	24.50%	12.60%	175	367	20	154	3
2041	1,514	24.50%	12.59%	180	212	9	171	2
2042	1,564	24.50%	12.59%	186	41	(4)	190	1
2043	1,614	15.50%	12.59%	47	(149)	(12)	59	-
2044	1,667	15.50%	12.58%	49	(208)	(17)	65	-

If all assumptions are met each year, in particular, the 7.25% assumed investment return, then the unfunded liability as of July 1, 2024 is expected to be paid off by July 1, 2043. This shows the projected payoff pattern of the unfunded liability assuming all assumptions are met, including 7.25% investment return on the smoothed value of assets.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

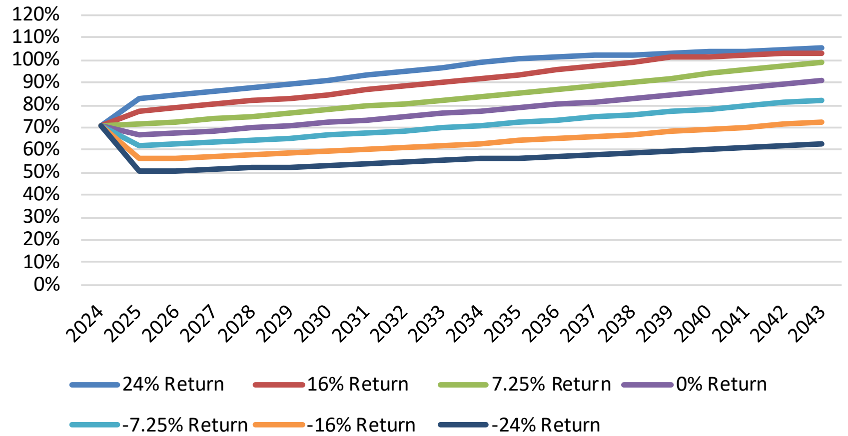
The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution rate shown on Exhibit B.4 may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

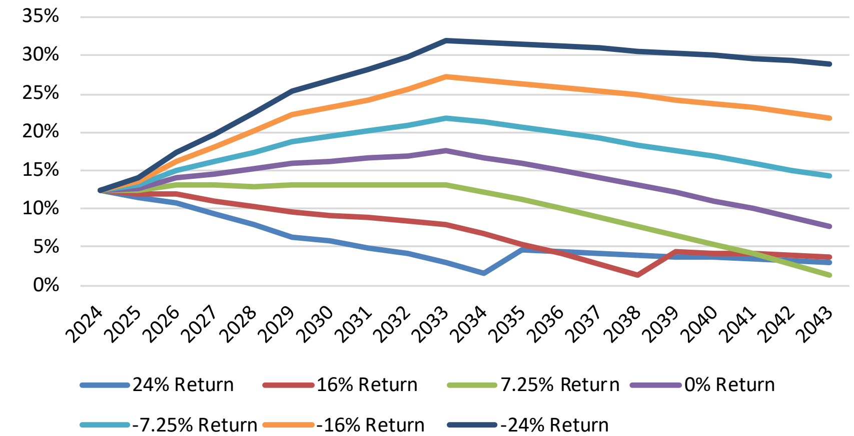
Risks Measures – Plan Maturity Measures

The following exhibits are intended to give the user a sense of the impact of short and long-term investment risk on NDTFFR funded status and actuarial contributions. The first set of projections assume the fair value earns the shown assumed return in fiscal year 2025 with investment returns of 7.25% in fiscal year 2026 and thereafter. For the purposes of showing the Actuarially Determined Employer contribution below, when the remaining amortization period reaches 10 years, it is assumed to operate as 10-year open.

Funded Ratio

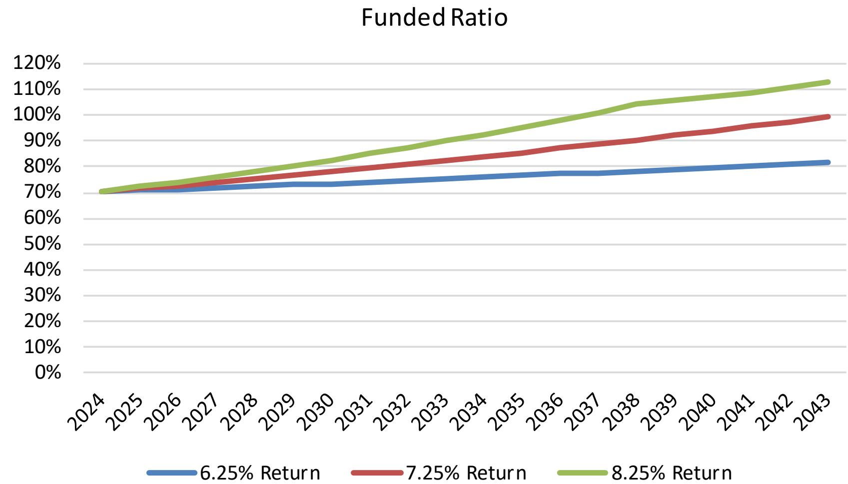


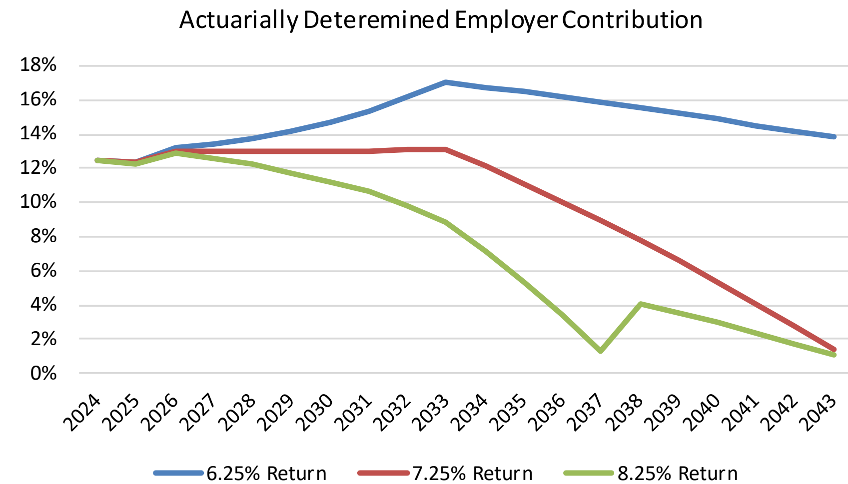
Actuarially Determined Employer Contribution



Risks Measures – Plan Maturity Measures

The second set of projections show the effects of long-term over or underperformance as compared to the 7.25% assumed investment return. Again, for the purposes of showing the Actuarially Determined Employer contribution below, when the remaining amortization period reaches 10 years, it is assumed to operate as 10-year open.





Risks Measures – Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	July 1, 2024	July 1, 2023	July 1, 2022
Ratio of the fair value of assets to total payroll	4.0	4.1	3.9
Ratio of actuarial accrued liability to payroll	5.7	5.9	5.8
Ratio of actives to retirees and beneficiaries	1.2	1.2	1.3
Ratio of net cash flows to fair value of assets	-2%	-2%	-2%
Duration of the actuarial accrued liability	12.1	12.0	12.2

Ratio of Fair Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the fair value of assets is 4.0 times the payroll, a return on assets 5% different than assumed would equal 20% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time. The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 5.5 times the payroll, a change in liability 2% other than assumed would equal 11% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Net Cash Flow to Fair Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the “Low-Default-Risk Obligation Measure” (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> “The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan.** The calculation and disclosure of this additional measure is **not intended to suggest that this is the “right” liability measure** for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”**

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the North Dakota Teachers’ Fund for Retirement (TFFR) is to finance each member’s retirement benefits over the period from the member’s date of hire until the member’s projected date of retirement (entry age actuarial cost method) as a level percentage of payroll. To fulfill this objective, the discount rate that is used to value the accrued liabilities of TFFR is set equal to the **expected return** on the Fund’s diversified portfolio of assets (referred to sometimes as the investment return assumption). For TFFR, the investment return assumption is 7.25%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. The LDROM results presented in this report are based on the entry age actuarial cost method and discount rates based upon the intermediate rate from the FTSE Pension Discount Curve and Liability Index published by the Society of Actuaries. This rate is 5.32% as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation.

The difference between the two measures (Valuation and LDROM) is one illustration of the savings the sponsor anticipates by taking on risk in a diversified portfolio.

Valuation Accrued Liabilities	LDROM
$4,758,417,607	$5,978,192,701

SECTION E

HISTORICAL EXHIBITS

Exhibit E.1
Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
7/1/2015	$ 2,125,017,451	$ 3,449,775,982	$ 1,324,758,531	61.6%	$ 589,783,780	224.6%
7/1/2016	2,229,292,988	3,589,393,851	1,360,100,863	62.1%	627,002,353	216.9%
7/1/2017	2,379,811,205	3,734,016,828	1,354,205,623	63.7%	650,052,674	208.3%
7/1/2018	2,526,058,269	3,863,515,726	1,337,457,457	65.4%	653,456,893	204.7%
7/1/2019	2,635,557,447	3,993,424,160	1,357,866,713	66.0%	680,481,816	199.5%
7/1/2020	2,745,012,472	4,181,035,763	1,436,023,291	65.7%	711,039,756	202.0%
7/1/2021	2,973,668,612	4,336,060,141	1,362,391,529	68.6%	749,414,372	181.8%
7/1/2022	3,132,980,715	4,479,973,211	1,346,992,496	69.9%	766,139,460	175.8%
7/1/2023	3,259,558,143	4,577,220,667	1,317,662,524	71.2%	777,724,718	169.4%
7/1/2024	3,408,483,045	4,758,417,607	1,349,934,562	71.6%	831,008,910	162.4%

Results prior to July 1, 2023 were calculated by the prior actuary.

Exhibit E.2
History of Cash Flows

Year Ended June 30	Contributions	Disbursements or Expenditures: Benefit Payments	Refunds	Administrative Expenses	Total Disbursements	Net Cash Flow	Fair Value of Assets	Net Cash Flow as a Percent of Fair Value
2015	$ 152,463,762	$ (168,349,762)	$ (3,889,671)	$ (1,923,392)	$ (174,162,825)	$ (21,699,063)	$ 2,141,920,800	(1.0)%
2016	161,995,828	(180,617,784)	(5,350,896)	(1,851,656)	(187,820,336)	(25,824,508)	2,124,335,288	(1.2)%
2017	168,157,111	(191,104,694)	(5,411,850)	(2,173,431)	(198,689,975)	(30,532,864)	2,360,491,075	(1.3)%
2018	168,928,460	(202,417,031)	(5,561,668)	(2,128,794)	(210,107,493)	(41,179,033)	2,530,657,411	(1.6)%
2019	173,949,975	(215,328,174)	(5,900,392)	(2,251,083)	(223,479,649)	(49,529,649)	2,616,171,056	(1.9)%
2020	181,101,767	(224,361,530)	(6,489,704)	(2,095,405)	(232,946,639)	(51,844,872)	2,650,532,301	(2.0)%
2021	191,506,645	(235,205,084)	(5,923,187)	(2,678,375)	(243,806,646)	(52,300,001)	3,282,404,830	(1.6)%
2022	194,835,791	(244,705,096)	(7,142,359)	(2,592,340)	(254,439,795)	(59,604,004)	3,023,920,243	(2.0)%
2023	197,689,825	(254,361,928)	(7,920,125)	(2,891,047)	(265,173,100)	(67,483,275)	3,173,908,455	(2.1)%
2024	208,981,973	(265,434,894)	(12,225,640)	(3,312,773)	(280,973,307)	(71,991,334)	3,351,007,841	(2.1)%

Exhibit E.3
Development of the Fund

Year Ended June 30	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return	Administrative Expenses	Benefit Payments	Fair Value of Assets	Actuarial Value of Assets	Actuarial Value as a Percent of Fair Value
2015	$ 78,422,098	$ 72,268,451	$ 1,773,213	$ 73,204,806	$ 1,923,392	$ 172,239,433	$ 2,141,920,800	$ 2,125,017,451	99.2%
2016	82,839,932	76,342,685	2,813,211	8,238,996	1,851,656	185,968,680	2,124,335,288	2,229,292,988	104.9%
2017	86,058,868	79,309,153	2,789,090	266,688,651	2,173,431	196,516,544	2,360,491,075	2,379,811,205	100.8%
2018	86,675,715	79,877,611	2,375,134	211,345,369	2,128,794	207,978,699	2,530,657,411	2,526,058,269	99.8%
2019	89,444,880	82,429,595	2,075,500	135,043,319	2,251,083	221,228,566	2,616,171,056	2,635,557,447	100.7%
2020	93,032,453	85,735,134	2,334,180	86,206,117	2,095,405	230,851,234	2,650,532,301	2,745,012,472	103.6%
2021	98,264,202	90,557,210	2,685,233	684,172,530	2,678,375	241,128,271	3,282,404,830	2,973,668,612	90.6%
2022	100,331,347	92,462,223	2,042,221	(198,880,583)	2,592,340	251,847,455	3,023,920,243	3,132,980,715	103.6%
2023	102,307,888	94,283,739	1,098,198	217,471,487	2,891,047	262,282,053	3,173,908,455	3,259,558,143	102.7%
2024	108,087,909	99,610,414	1,283,650	249,090,720	3,312,773	277,660,534	3,351,007,841	3,408,483,045	101.7%

Results prior to July 1, 2023 were calculated by the prior actuary.

Exhibit E.4
History of Employer Contributions

Year Ended June 30	Actuarially Determined Employer Contribution (ADC) Amount	Actuarially Determined Employer Contribution (ADC) Percentage of Payroll	Actual Employer Contributions Amount	Actual Employer Contributions Percentage of Payroll	Percent Contributed
2015	$ 71,167,632	11.57%	$ 78,422,098	12.75%	110.19%
2016	84,724,123	13.04%	82,839,932	12.75%	97.78%
2017	89,231,211	13.22%	86,059,000	12.75%	96.44%
2018	88,307,239	12.99%	86,675,715	12.75%	98.15%
2019	90,777,781	12.94%	89,444,881	12.75%	98.53%
2020	93,688,429	12.84%	93,032,453	12.75%	99.30%
2021	101,655,277	13.19%	98,264,202	12.75%	96.66%
2022	97,341,070	12.37%	100,331,347	12.75%	103.07%
2023	97,252,421	12.12%	102,307,888	12.75%	105.20%
2024	105,990,323	12.50%	108,087,909	12.75%	101.98%

Results prior to July 1, 2023 were calculated by the prior actuary.

Exhibit E.5
Solvency Test

Valuation Date	Aggregated Accrued Liabilities ($ in millions) Active Members Contributions	Retirees Beneficiaries and Vested Terminations	Members (Employer Financed Portion)	Actuarial Value of Assets ($ in millions)	Portion of Accrued Liabilities Covered by Reported Assets (5)/(2) Max 100%	[(5)-(2)]/(3) Max 100%	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
7/1/2015	$ 737.5	$ 1,874.7	$ 837.6	$ 2,125.0	100.0%	74.0%	0.0%
7/1/2016	792.8	1,976.3	820.3	2,229.3	100.0%	72.7%	0.0%
7/1/2017	839.1	2,092.9	802.0	2,379.8	100.0%	73.6%	0.0%
7/1/2018	881.4	2,222.0	760.1	2,526.1	100.0%	74.0%	0.0%
7/1/2019	941.5	2,314.0	737.9	2,635.6	100.0%	73.2%	0.0%
7/1/2020	1,010.5	2,397.6	772.9	2,745.0	100.0%	72.3%	0.0%
7/1/2021	1,063.2	2,515.2	757.7	2,973.7	100.0%	76.0%	0.0%
7/1/2022	1,124.0	2,606.5	749.5	3,133.0	100.0%	77.1%	0.0%
7/1/2023	1,170.4	2,710.2	696.7	3,259.6	100.0%	77.1%	0.0%
7/1/2024	1,251.1	2,749.1	758.2	3,408.5	100.0%	78.5%	0.0%

Results prior to July 1, 2023 were calculated by the prior actuary.

Exhibit E.6
History of Liability Changes Due to Demographic Experience

Valuation Date	July 1, 2024	July 1, 2023	July 1, 2022	July 1, 2021	July 1, 2020	July 1, 2019
1. Salary (Gain)/Loss	$ 19,380,468	$ (27,485,400)	$ (26,223,700)	$ (1,067,168)	$ (18,178,784)	$ (21,895,994)
2. New Members and Rehire (Gain)/Loss	8,973,615	7,460,924	6,137,116	6,123,323	6,931,752	7,394,261
3. Withdrawal (Gain)/Loss	(5,161,087)	(5,254,382)	1,859,343	1,844,017	3,380,478	3,820,142
4. Retirement (Gain)/Loss	3,503,211	6,660,564	4,117,006	6,174,806	606,373	1,286,280
5. Annuitant Mortality (Gain)/Loss	4,308,042	(10,997,287)	(5,489,934)	(5,879,360)	(9,679,603)	(9,737,737)
6. Other Demographic (Gain)/Loss	1,432,063	(25,835,772)	10,426,238	512,915	(4,462,797)	(5,005,758)
7. Total	$ 32,436,312	$ (55,451,354)	$ (9,173,931)	$ 7,708,533	$ (21,402,581)	$ (24,138,806)

Results prior to July 1, 2023 were calculated by the prior actuary.

Other demographic gains in 2023 include changes in the AAL due to change in actuaries.

SECTION F

SUMMARY BENEFIT PROVISIONS

Summary of Benefit Provisions

Effective Date

July 1, 1971

Plan Year

July 1 through June 30

Administration

The North Dakota Teachers' Fund for Retirement (NDTFFR) is administered by a Board of Trustees. A separate State Investment Board is responsible for the investment of the trust assets, although NDTFFR's Board establishes the asset allocation policy. The Retirement and Investment Office is the administrative agency for NDTFFR.

Membership

All certified teachers of any public school in the State participate in NDTFFR. 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 NDTFFR. Eligible employees become members at their date of employment.

Tier 1 members include all active, inactive, or retired members who had TFFR service credit on July 1, 2008.

Tier 1 members who were vested (3 years of service credit) and least age 55 or had the Rule of 65 or greater (age + service) as of June 30, 2013 were grandfathered under retirement eligibility provisions effective prior to July 1, 2013. Non-grandfather Tier 1 members and all Tier 2 members will use unreduced and reduced retirement provisions effective July 1, 2013.

Tier 2 members include all new members and returning refunded members who are employed on or after July 1, 2008.

Credited Service

A member employed full time who received compensation for at leave 700 hours in a fiscal year earns one year of service. A member who receives compensation for less than 700 hours of service earns a fractional credit equal to the number of compensated hours worked in a fiscal year divided by 700 hours. A member may not earn more than one year of service in a fiscal year. A member may purchase additional service credited under the conditions outlined in Section 15-39.1-24 of the North Dakota Century Code.

Salary

A 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.

Member Contribution Rates

All active members contribute 11.75% of their salary per year. The Employer may "pick up" the member's contribution 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 the current 11.75% effective July 1, 2014. The member contribution rate will remain in effect at 11.75% until TFFR is 100% funded on an actuarial basis, at which time the member contribution rate will revert to 7.75%.

Employer Contribution Rates

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 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, such that 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 below 100%.

Final Average Monthly Salary (FAS)

Tier 1: The average of the member's highest three annual fiscal year salaries reported to TFFR divided by 12.

Tier 2: The average of the member's highest five annual fiscal year salaries reported to TFFR divided by 12.

Normal Retirement

Eligibility
Tier 1 Grandfathered: Sum of age and credited service equals 85 or more or age 65 with 3 or more years of credited service.

Tier 1 Non-Grandfathered: Sum of age and credited service equals 90 or more, with a minimum age of 60, or age 65 with 3 or more years of credited service.

Tier 2: Sum of age and credited service equals 90 or more, with a minimum age of 60, or age 65 with 5 or more years of credited service.

Annual Benefit
2.00% of FAS times credited service.

Early Retirement

Eligibility
Tier 1 Grandfathered & Tier 1 Non-Grandfathered: Age 55 with 3 or more years of credited service.

Tier 2: Age 55 with 5 or more years of credited service.

Annual Benefit
2.00% of FAS times credited service, multiplied by a factor that will reduce the benefit by 6% for Tier 1 Grandfathered, 8% for Tier 1 Non-Grandfathered and Tier 2, for each year the member retires prior to eligibility for Normal Retirement.

Deferred Vested Retirement

Eligibility:
A Tier 1 member who terminates with 3 or more years of service credit and a Tier 2 member who terminates employment with 5 or more years of service credit and does not withdraw contributions.

Annual Benefit:
Accrued regular retirement amount based on credited service and FAS at the time of termination. Early Retirement reductions will apply if a member chooses to receive their benefit prior to Normal Retirement Age. Members may choose a Refund in lieu of all other benefits.

Pre-Retirement Death Benefit

Eligibility:
Death prior to retirement.

Annual Benefit:
Upon the death of a non-vested member, a refund of the member's contributions and interest is paid. Upon the death of a non-vested member, the beneficiary may elect; the refund benefit, or a life annuity of the normal retirement benefit based on FAS and service as of the date of death with no reduction for the member's age at death.

Disability Retirement

Eligibility:
A member is eligible once they have completed 5 or more years of credited service. Prior to July 1, 2013, a member needed to complete one or more years of credited service.

Annual Benefit:
Computed in the same manner as the regular retirement amount base on FAC and credited service at time of disability retirement. Prior to July 1, 2013, there was a minimum of 20 years of service applied.

Refund of Contributions

Eligibility:
Termination of a member prior to accruing 3 years of credited service for Tier 1 members, or 5 years of credited service for Tier 2 members.

Annual Benefit:
A lump sum payment of the member's employee contributions plus interest credited on these contributions. Interest is credited at 6% per year prior to benefit commencement.

Normal Form of Payment

Single Life annuity.

Optional Forms of Payment

Optional benefit forms are available and equal to the Actuarial Equivalent of the Life Annuity. Actuarial equivalence is based on tables adopted by the Board of Trustees.

- Single Life Annuity
- 100% Joint and Survivor Annuity
- 50% Joint and Survivor Annuity
- Ten-Year Term Certain and Life Annuity
- Twenty-Year Term Certain and Life Annuity
- Partial Lump Sum Option

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.

Note: The summary of plan provisions is designed to outline principal plan benefits, it is not a complete statement of all plan provisions. If NDTFFR should find the plan summary not in accordance with the actual plan provisions, the actuary should immediately be alerted so the proper provisions are valued.

SECTION G

SUMMARY PLAN CHANGES

Summary of Plan Changes

1991 Legislative Sessions:

1. Benefit multiplier increased from 1.275% to 1.39% for all future retirees.
2. Provide a post retirement benefit increases 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.

Summary of Plan Changes

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 State 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 sessions.

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 State 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.

2015 Legislative Session:

1. Various technical and administrative changes that do not have an actuarial effect on the Plan were enacted.

2017 Legislative Session:

There were no material changes made during the 2017 legislative sessions.

2019 Legislative Session:

There were no material changes made during the 2019 legislative sessions.

2021 Legislative Session:

There were no material changes made during the 2021 legislative sessions.

2023 Legislative Session:

1. House Bill 1219 expanded return to work options in critical shortage areas and eliminated the level income optional form of payment. The required payment to regain service credit for a teacher who has previously withdrawn from the fund and is returning to teach will be calculated on an actuarial equivalent basis.
2. House Bill 1150 enacted an exception to membership in the teachers' fund for retirement for retired military personnel.

SECTION H

SUMMARY PARTICIPANT DATA

Exhibit H.1
Summary of Census Data

	July 1, 2024	July 1, 2023	Change from Prior Year
1. Active Members			
a. Total Counts	11,945	11,766	1.52%
i. Males	2,864	2,836	0.99%
ii. Females	9,081	8,930	1.69%
b. Annual Compensation	$ 831,008,910	$ 777,724,718	6.85%
c. Average Annual Compensation	$ 69,570	$ 66,099	5.25%
d. Average Age	41.3	41.2	0.1
e. Average Service	11.3	11.3	0.0
f. Total contributions with interest	$ 1,251,118,027	$ 1,170,413,834	6.90%
g. Average contributions with interest	$ 104,740	$ 99,474	5.29%
2. Deferred Vested Members			
a. Counts	2,147	2,010	6.82%
b. Average Age	48.4	48.5	(0.1)
c. Annual Deferred Benefits	$ 21,972,885	$ 19,061,484	15.27%
d. Average Benefit	$ 10,234	$ 9,483	7.92%
3. Retired Members			
a. Counts	8,603	8,567	0.42%
b. Average Age	73.6	73.1	0.5
c. Annual Benefits	$ 249,747,755	$ 244,493,556	2.15%
d. Average Benefit	$ 29,030	$ 28,539	1.72%
4. Disability			
a. Counts	127	123	3.25%
b. Average Age	67.0	66.9	0.1
c. Annual Benefits	$ 2,056,610	$ 1,885,628	9.07%
d. Average Benefit	$ 16,194	$ 15,330	5.63%
5. Beneficiaries and QDROs			
a. Counts	963	925	4.11%
b. Average Age	75.6	75.4	0.2
c. Annual Benefits	$ 17,057,422	$ 15,953,121	6.92%
d. Average Benefit	$ 17,713	$ 17,247	2.70%
6. Members Due Refund			
a. Counts	1,878	1,711	9.76%
b. Refunds Due	$ 28,847,776	$ 23,291,800	23.85%
7. Total Members Included in Valuation	25,663	25,102	2.23%

Active Membership

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 11,945 active members with an average age of 41.3 and average years of service of 11.3 years. The 11,766 active members in the prior valuation had an average age of 41.2 and average years of service of 11.3 years.

Exhibit H.2
Active Statistics

	July 1, 2024	July 1, 2023
Plan Eligibility		
Tier 1 Grandfathered	432	567
Tier 1 Non-grandfathered	2,859	2,952
Tier 2	8,654	8,247
Total	11,945	11,766
Benefit Elibility		
Non-Vested	3,492	3,430
Vested	7,048	6,944
Early Retirement	915	789
Normal Retirement	490	603
Total	11,945	11,766

Exhibit H.3

Active Member Counts and Average Salary by Age and Service as of July 1, 2024

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 25	36	223	88	9	0	0	0	0	0	0	0	0	356
	$22,965	$46,952	$51,413	$54,122	$0	$0	$0	$0	$0	$0	$0	$0	$45,810
25-29	21	275	379	343	300	375	0	0	0	0	0	0	1,693
	$22,926	$49,538	$53,480	$53,859	$55,786	$58,226	$0	$0	$0	$0	$0	$0	$53,997
30-34	26	128	129	129	115	998	237	0	0	0	0	0	1,762
	$24,372	$53,476	$55,063	$56,443	$59,346	$61,768	$65,324	$0	$0	$0	$0	$0	$60,053
35-39	10	106	87	87	54	440	856	176	2	0	0	0	1,818
	$30,142	$53,411	$59,934	$58,554	$59,814	$65,418	$70,792	$75,036	$79,146	$0	$0	$0	$67,243
40-44	13	113	96	74	72	282	384	625	133	2	0	0	1,794
	$24,569	$55,875	$61,161	$61,401	$63,237	$67,151	$73,351	$80,679	$86,297	$60,558	$0	$0	$72,870
45-49	10	82	49	48	51	213	227	274	434	109	1	0	1,498
	$27,809	$57,490	$59,632	$60,554	$64,524	$70,277	$76,250	$84,727	$86,212	$92,381	$87,680	$0	$78,223
50-54	8	40	42	38	30	142	171	160	210	411	61	0	1,313
	$27,129	$59,518	$65,208	$66,179	$69,202	$70,667	$77,469	$83,547	$87,153	$91,394	$89,826	$0	$82,194
55-59	2	30	25	29	20	114	98	99	137	215	212	39	1,020
	$22,395	$62,666	$68,075	$67,221	$86,381	$76,141	$78,904	$78,636	$83,962	$88,545	$90,047	$94,282	$83,145
60-64	5	15	11	11	13	66	68	62	70	63	58	77	519
	$28,861	$67,654	$59,377	$67,042	$66,050	$77,444	$74,148	$81,255	$82,820	$89,280	$90,999	$87,878	$81,052
65 & Over	2	4	6	5	6	33	36	25	16	4	5	30	172
	$23,162	$41,558	$60,564	$53,049	$68,544	$69,011	$76,933	$71,572	$76,907	$81,402	$91,162	$80,639	$72,789
Total	133	1,016	912	773	661	2,663	2,077	1,421	1,002	804	337	146	11,945
	$24,761	$52,234	$56,317	$57,249	$60,072	$64,691	$72,387	$80,806	$85,713	$90,474	$90,180	$88,101	$69,570

Inactive Membership Not in Payment Status

In this year's valuation there were 2,147 members with a vested right to a deferred or immediate vested benefit. In addition, there were 1,878 members entitled to a return of employee contributions. Compared to 2,010 members entitle to a vested benefit and 1,711 members due refunds of employee contributions last year.

Exhibit H.4
Summary of Inactive Vested Members
as of July 1, 2024

Age	Number of Members	Average Monthly Benefit
Under 30	15	$ 6,904
30-34	203	110,735
35-39	298	210,743
40-44	364	272,979
45-49	299	257,290
50-54	316	360,926
55-59	321	361,103
60-64	263	205,282
65 & Over	68	45,113

Members in Payment Status

As of July 1, 2024, 8,730 retired and disabled participants and 963 beneficiaries were receiving total monthly benefits of $22,405,149. For comparison, in the previous valuation, there were 8,690 retired participants and 925 beneficiaries receiving monthly benefits of $21,861,025. As of July 1, 2024, the average monthly benefit for retirees and beneficiaries is $2,311 compared to $2,274 in the previous valuation. The average age for retirees and beneficiaries in 73.7 in the current valuation compared with 73.3 in the prior valuation.

Exhibit H.5
Summary of Members in Pay Status as of July 1, 2024

	Service Retirees		Disabled Retirees		Beneficiaries/QDROs	
Age	Number of Members	Annual Benefit	Number of Members	Annual Benefit	Number of Members	Annual Benefit
Under 55	7	$ 409,496	15	$ 257,515	77	$ 881,794
55-59	330	16,589,443	15	342,775	30	436,261
60-64	855	36,613,087	17	299,582	45	888,059
65-69	1,670	57,739,351	28	455,936	81	1,636,580
70-74	2,311	66,298,899	19	286,746	150	3,329,699
75-79	1,664	40,129,165	22	309,312	174	3,192,709
80-84	957	19,364,498	5	52,271	175	3,265,446
85-89	535	9,063,690	6	52,474	135	2,050,801
90 & Over	274	3,698,271	0	0	96	1,376,074

Exhibit H.6
Schedule of Retired Members by Type as of July 1, 2024

		Type of Retirement		
Monthly Benefit	**# of Retirees**	**Service Retirees**	**Disabled Retirees**	**Beneficiaries/ QDROs**
Under $200	266	219	0	47
$200 - $399	433	356	0	77
$400 - $599	433	348	11	74
$600 - $799	395	293	14	88
$800 - $999	382	278	16	88
$1,000 - $1,199	440	335	19	86
$1,200 - $1,399	445	358	19	68
$1,400 - $1,599	487	410	14	63
$1,600 - $1,799	574	493	9	72
$1,800 - $1,999	598	533	7	58
$2,000 - $2,199	571	521	5	45
$2,200 - $2,399	561	525	3	33
$2,400 - $2,599	466	431	2	33
$2,600 - $2,799	441	407	3	31
$2,800 - $2,999	454	431	2	21
$3,000 - $3,199	394	377	1	16
$3,200 - $3,399	371	357	0	14
$3,400 - $3,599	310	295	0	15
$3,600 - $3,799	285	277	1	7
$3,800 - $3,999	234	228	0	6
$4,000 & over	1,153	1,131	1	21
Total	**9,693**	**8,603**	**127**	**963**

Exhibit H.7
Schedule of Annuitants by Type of Benefit as of July 1, 2024

Type of Benefits/Form of Payment	Number	Annual Benefits Amount	Monthly Benefits
Service Retirees			
Straight Life	3,079	$ 79,996,923	$ 2,165
100% J&S	3,960	127,262,917	2,678
50% J&S	768	24,158,106	2,621
5 Years C&L	8	142,708	1,487
10 Years C&L	158	3,787,936	1,998
20 Years C&L	193	5,624,763	2,429
Level	437	8,774,402	1,673
Subtotal	8,603	$ 249,747,755	$ 2,419
Disability			
Straight Life	94	$ 1,496,664	$ 1,327
100% J&S	22	361,058	1,368
50% J&S	7	126,923	1,511
5 Years C&L	1	6,254	521
10 Years C&L	1	33,698	2,808
20 Years C&L	2	27,913	1,163
Level	0	0	0
Subtotal	127	$ 2,052,510	$ 1,347
Beneficiaries			
Straight Life	879	$ 16,309,519	$ 1,546
10 Years C&L	10	119,671	997
20 Years C&L	38	316,107	693
QDRO Alternate Payee	36	312,125	723
Subtotal	963	$ 17,057,422	$ 1,476
Total	9,693	$ 268,857,687	$ 2,311

Exhibit H.8
Summary of Changes in Participant Status
During Fiscal Year 2024

	Active Participants	Vested Terminated	Non-Vested Terminated	Retirees	Disability	QDROs	Beneficiaries	Total
A. Number as of July 1, 2023	11,766	2,010	1,711	8,567	123	31	894	25,102
1. Age Retirements	(174)	(58)		232				0
2. Disability	(6)	(1)			7			0
3. Deceased	(7)	(7)	(1)	(195)	(4)	(2)	(43)	(259)
4. New Beneficiary						7	84	91
5. Terminated - Vested	(323)	323						0
6. Terminated - Nonvested	(296)		296					0
7. Cashouts	(187)	(36)	(61)					(284)
8. Benefits Expired							(8)	(8)
9. Rehired as Active	168	(71)	(87)					10
10. New Members	1,004		7					1,011
11. Data Corrections		(13)	13	(1)	1			0
B. Number as of July 1, 2024	**11,945**	**2,147**	**1,878**	**8,603**	**127**	**36**	**927**	**25,663**

Exhibit H.9
Historical Member Population

As of July 1	Active Members	Inactive Vested Members	Inactive Non-Vested Members	Participants and Beneficiaries	Ratio of Non-actives to Actives*
2015	10,514	1,607	660	8,025	0.92
2016	10,813	1,601	779	8,249	0.91
2017	10,874	1,600	878	8,501	0.93
2018	10,881	1,623	971	8,743	0.95
2019	11,175	1,657	1,035	8,918	0.95
2020	11,347	1,715	1,132	9,036	0.95
2021	11,627	1,754	1,213	9,262	0.95
2022	11,802	1,827	1,423	9,438	0.95
2023	11,766	2,010	1,711	9,615	0.99
2024	11,945	2,147	1,878	9,693	0.99

*Excludes inactive non-vested members

Exhibit H.10
Historical Active Member Data Statistics

	Active Members		Total Payroll Supplied by System, Annualized		Average Salary			
As of July 1	Number	Percent Change	Amount in Millions	Percent Change	Amount	Percent Change	Average Age	Average Service
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
2015	10,514	2.0%	589.8	5.8%	56,095	3.7%	42.5	12.4
2016	10,813	2.8%	627.0	6.3%	57,986	3.4%	42.3	12.1
2017	10,874	0.6%	650.1	3.7%	59,780	3.1%	42.1	11.9
2018	10,881	0.1%	653.5	0.5%	60,055	0.5%	41.9	11.8
2019	11,175	2.7%	680.5	4.1%	60,893	1.4%	41.8	11.7
2020	11,347	1.5%	711.0	4.5%	62,663	2.9%	41.8	11.7
2021	11,627	2.5%	749.4	5.4%	64,455	2.9%	41.1	11.4
2022	11,802	1.5%	766.1	2.2%	64,916	0.7%	41.3	11.3
2023	11,766	(0.3)%	777.7	1.5%	66,099	1.8%	41.2	11.3
2024	11,945	1.5%	831.0	6.9%	69,570	5.3%	41.3	11.3

Exhibit H.11
Historical Service Retirees Data Statistics

	Service Retirees		Average Annual Amount		
As of July 1	Number	Percent Change	Amount	Percent Change	Average Age
2015	7,250	3.7%	$ 22,976	3.4%	71.0
2016	7,435	2.6%	23,593	2.7%	71.3
2017	7,664	3.1%	24,352	3.2%	71.5
2018	7,877	2.8%	25,187	3.4%	71.7
2019	8,019	1.8%	25,887	2.8%	72.0
2020	8,091	0.9%	26,531	2.5%	72.3
2021	8,290	2.5%	27,250	2.7%	72.5
2022	8,424	1.6%	27,907	2.4%	72.9
2023	8,567	1.7%	28,539	2.3%	73.1
2024	8,603	0.4%	29,030	1.7%	73.6

SECTION I

SUMMARY OF ACTUARIAL COST METHODS AND ASSUMPTIONS

I. Valuation Date

The valuation date is July 1th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate including administrative expenses, and (ii) a rate that will amortize the unfunded actuarial liability.

1. The valuation is prepared on the projected benefit basis. The present value of each participant's expected benefit payable at retirement or termination is determined, based on age, service, sex, compensation, and the interest rate assumed to be earned in the future (7.25%). The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.

2. The employer contributions required to support the benefits of the Plan are determined following a level percent of pay funding approach, and consist of a normal cost contribution and an unfunded accrued liability contribution, plus a component to cover administrative expenses.

3. The normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using the individual entry age actuarial cost method having the following characteristics of (i) the annual normal costs for each active member, payable from the date of entry into the system to the date of retirement, are sufficient to accumulate the value of the member’s benefit at the time of retirement, and (ii) each annual normal cost is constant percentage of the member’s year-by-year projected covered pay.

4. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over a 30-year closed period that began July 1, 2013 as a level percentage of pay. It is assumed that payments are made throughout the year.

III. Actuarial Value of Assets

The actuarial value of assets is determined by recognizing fair value gains and losses over a five-year period. Gain and loss bases to be spread over the five-year period are determined by comparing expected returns based on the fair value of assets and cash flows during the year to actual investment returns. The actuarial value of assets must be between 80 and 120% of fair value.

IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.25% per annum, compounded annually. Inflation is assumed to be 2.30%.

2. Salary increase rate: Individual salary increases are composed of a price inflation component, a productivity increase componenet, and a step-rate/promotional component that varies by service. The table below combines the various components of salary increases.

	Percentage Increase in Salary			
Attained Service	**Price Inflation**	**Productivity Increase Rate**	**Step-Rate Promotional**	**Total**
0	2.30 %	1.50 %	11.00 %	14.80 %
1	2.30 %	1.50 %	3.00 %	6.80
2	2.30 %	1.50 %	2.75 %	6.55
3-4	2.30 %	1.50 %	2.50 %	6.30
5-6	2.30 %	1.50 %	2.00 %	5.80
7-8	2.30 %	1.50 %	1.75 %	5.55
9-11	2.30 %	1.50 %	1.50 %	5.30
12-13	2.30 %	1.50 %	1.25 %	5.05
14-15	2.30 %	1.50 %	1.00 %	4.80
16-18	2.30 %	1.50 %	0.75 %	4.55
19-22	2.30 %	1.50 %	0.75 %	4.55
23-29	2.30 %	1.50 %	0.25 %	4.05
30+	2.30 %	1.50 %	0.00 %	3.80

3. Payroll Growth Rate: 3.25% per annum. This assumption does not include any allowances for future increase in the number of members.

4. Administrative expenses are assumed to be equal to the prior year’s amount, increased with inflation.

B. Demographic Assumptions

1. Rates of Mortality for Healthy and Disabled Lives: Mortality rates are based on the sex-distinct employee and annuitant mortality tables described below, including adjustment factors applied to the published tables for each group. Future mortality improvements are reflected by applying the MP-2019 Projection Scale on a generational basis to the adjusted base tables from the base year shown below.

   i) Non-Annuitant – Pub-2010, Amount-Weighted, Teachers, Employee mortality table

   (i) Healthy Annuitant – 104% Pub-2010, Amount-Weighted, Teachers, Healthy Retiree mortality table and 95% of the Pub-2010 Contingent Survivor Table.

   (ii) Disabled Annuitant – Pub-2010, Amount-Weighted, General, Disabled Retiree mortality tables

   Sample rates, including projections to 2024, are shown below.

Sample Attained Ages	Probability of Death Pre-Retirement	
	Men	Women
20	0.030 %	0.011 %
25	0.014	0.008
30	0.019	0.012
35	0.026	0.017
40	0.036	0.027
45	0.058	0.042
50	0.096	0.063
55	0.149	0.093
60	0.229	0.140
65	0.378	0.235
70	0.616	0.421
75	0.936	0.800
80	1.850	1.586
85	5.687	4.346
90	11.634	8.852

Sample Attained Ages	Probability of Death Post-Retirement	
	Men	Women
20	0.035 %	0.014 %
25	0.017	0.009
30	0.023	0.015
35	0.034	0.022
40	0.050	0.035
45	0.078	0.053
50	0.121	0.082
55	0.213	0.181
60	0.331	0.269
65	0.563	0.439
70	1.043	0.755
75	1.933	1.356
80	3.544	2.568
85	6.668	4.985
90	12.446	9.564

Sample Attained Ages	Probability of Death Post-Disability	
	Men	Women
20	0.411 %	0.235 %
25	0.278	0.166
30	0.358	0.262
35	0.497	0.428
40	0.737	0.692
45	1.134	1.046
50	1.641	1.440
55	1.943	1.570
60	2.230	1.765
65	2.782	2.136
70	3.657	2.698
75	4.752	3.572
80	6.511	5.263
85	9.583	8.303
90	14.669	12.455

2. Disability rates. Sample disability rates of active members are provided in the table below. There rates apply to both male and female NDTFFR member.

Sample Attained Ages	Probability of Disablement
25	0.0088 %
30	0.0088
35	0.0088
40	0.0264
45	0.0440
50	0.0704
55	0.1232
60	0.2376

3. Termination rates (for causes other than death, disability or retirement): Termination rates are based on years from hire. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates are shown below:

Probability of Termination		
Years of Service	Male	Female
0	15.00 %	15.00 %
1	13.00	11.00
2	11.00	9.50
3	8.00	7.50
4	6.00	6.00
5	5.25	5.50
6	4.00	4.50
7	3.75	4.00
8	3.00	2.75
9-10	2.50	2.75
11-12	2.00	2.50
13	2.00	2.25
14	1.50	2.25
15-16	1.50	1.75
17-18	1.50	1.50
19-22	0.75	1.25
23-24	0.75	1.00
24+	0.75	0.75

4. Retirement rates

Probability of Retirement			
Age	Unreduced Retirement*		Reduced Retirement
	Male	Female	Unisex
50-54	15.00 %	15.00 %	2.00 %
55-56	15.00	15.00	2.00
57	15.00	15.00	3.00
58	15.00	15.00	3.50
59	15.00	15.00	4.00
60	15.00	15.00	5.00
61	30.00	25.00	9.00
62	30.00	30.00	10.00
63	25.00	30.00	11.00
64	35.00	40.00	12.00
65	30.00	35.00	
66	25.00	30.00	
67	25.00	20.00	
68-74	20.00	20.00	
75	100.00	100.00	

**If a member reaches eligibility for unreduced retirement before age 65 under the rule of 85 (Grandfathers Tier 1) or the Rule of 90/Age 60 (Non-Grandfathered Tier 1 and Tier 2), 12.5% is added to the rate at the age (and only this age) the member becomes first eligible for an unreduced retirement benefit.*

C. <u>Other Assumptions</u>

1. Percent married: 75% of employees are assumed to be married.
2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
4. 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.
5. Loading Factor for New Retirees: The liability includes a 3% load for members who retired during the year leading up to the valuation date to reflect that their benefits are not finalized as of the valuation date.
5. Decrement Timing : Retirement is assumed to occur at the beginning of the year and all other decrements are assumed to occur middle of the year.

SECTION J

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for 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. These items are used to determine the 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., the Fund's assets earn more than projected, salaries do not increase as fast as 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 that produce actuarial liabilities which 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. For purposes of this standard, 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 those benefit amounts which are 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 and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to 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.

Actuarial Value of Assets or ***Valuation 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 actuaries 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 which 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.

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: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Actuarially Determined Contribution (ADC) or ***Annual Required Contribution (ARC):*** A calculated contribution for a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the calculated contribution has a normal cost payment and an amortization payment.

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: An employer-sponsored retirement benefit that provides workers, upon attainment of designated age and service thresholds, with a monthly benefit based on the employee's salary and length of service. The value of a benefit from a defined benefit plan is generally not affected by the return on the assets that are invested to fund the benefit.
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, and 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 which 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 fair funded ratio, using the fair value of assets (FVA), rather than the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used it two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, 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: The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is 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 which 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. In other words, 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.

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.