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

ND TFFR BOARD MEETING

Thursday, April 21, 2022, 1:00 p.m.
Peace Garden Room, Capitol (In Person)
Teleconferencing – 701.328.0950 Participant Code – 890 581 174#
600 E Boulevard Ave, Bismarck, ND

AGENDA

I. **CALL TO ORDER AND ACCEPTANCE OF AGENDA**
   A. Executive Summary

II. **ACCEPTANCE OF MINUTES (March 25, 2022)**

III. **GOVERNANCE (110 minutes)**
   A. Plan Management Policy Score Update – Matt Strom & Brad Ramirez, Segal
   B. Annual Pension Plan Comparison Report – Ms. Murtha, Ms. Weeks

(Break)

   C. Board Calendar & Education Plan– Ms. Murtha
   D. 2023 Legislative Planning Update – Ms. Murtha
   E. PAS Project Update – Ms. Murtha

IV. **REPORTS (15 minutes) *Board Action***
   A. Executive Limitations/Staff Relations Report – Ms. Murtha

V. **Consent Agenda – QDRO[1]**

VI. **OTHER BUSINESS**
   A. Board Reading Materials – *Material References Included*
   B. Next Meeting:
      1. TFFR Regular Board Meeting Thursday, July 21, 2022, at 1:00p.m.
      2. GPR Committee – Tuesday May 10, 2022, at 3:30pm (tentative)
         Tuesday June 7, 2022, at 3:30pm (tentative)

VII. **ADJOURNMENT**

[1] Executive Session possible if Board discusses 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
April 21, 2022 – 1:00pm CT

I. **Agenda:** The **April Board Meeting will be held at the Peace Garden room at the State Capitol to accommodate in person attendance, however, a link will also be provided so that Board members and other attendees may join via video conference.** There will be a call-in number for the public.

II. **Minutes (Board Action):** The March 24, 2022, Board meeting minutes are included for review and approval.

III. **A. Plan Management Policy Score Update (Board Action):** Segal will provide a brief background on the purpose of the Plan Management Policy Review and Score; and present an updated TFFR Plan Management Policy Score for Board acceptance.

B. Annual Pension Plan Comparison Report (Board Action): Staff will present a report that compares key plan characteristics of the TFFR Plan with the results a 2021 public funds survey conducted by NASRA (National Association of State Retirement Administrators) for Board acceptance.

C. 2021-2022 Board Calendar and Education Plan (Board Action): Staff will present a proposed 2022-2023 Board Calendar and Education plan for Board approval.

D. 2023 Legislative Planning Update (Information Only): Staff will present the final statutory changes discussed and approved by the Board at its March meeting and submitted to Legislative Council for consideration by the Employee Benefits Programs Committee. The next EBPC meeting is scheduled for May 3, 2022.

E. PAS Project Update (Information Only): Ms. Murtha will provide the Board with an update on the current status of the PAS project.

IV. **A. Reports (Board Action):** Staff will provide a report on executive limitations/staff relations.

V. **CONSENT AGENDA (Board Action):** The Board will be provided with a QDRO for review and approval.

Adjournment.

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
MARCH 24, 2022, BOARD MEETING

BOARD MEMBERS PRESENT:	Dr. Rob Lech, President Mike Burton, Vice President Kirsten Baesler, State Supt. DPI Thomas Beadle, State Treasurer Cody Mickelson, Trustee Mel Olson, Trustee Jordan Willgohs, Trustee
STAFF PRESENT:	Connie Flanagan, CFO Jayme Heick, Retirement Programs Spec Missy Kopp, Executive Assistant Denise Leingang-Sargeant, Member Spec Jan Murtha, Exec Dir Sara Sauter, Supvr of Internal Audit Rachelle Smith, Retirement Assistant Stephanie Starr, Retirement Programs Spec Dottie Thorsen, Internal Auditor
OTHERS PRESENT:	Dean DePountis, Atty. General's Office Jessica Newby, NDIT Matt Strom, Segal

CALL TO ORDER:

Dr. Rob Lech, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the meeting to order at 1:00 p.m. on Thursday, March 24, 2022. The meeting was held in the Workforce Safety and Insurance Board Room, 1600 E Century Ave., Bismarck, ND.

THE FOLLOWING MEMBERS WERE PRESENT REPRESENTING A QUORUM: SUPT. BAESLER, TREASURER BEADLE, MR. BURTON, DR. LECH, MR. MICKELSON, MR. OLSON, AND MR. WILLGOHS.

ACCEPTANCE OF AGENDA:

The Board considered the agenda for the March 24, 2022, meeting.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO APPROVE THE AGENDA AS DISTRIBUTED.

AYES: SUPT. BAESLER, TREASURER BEADLE, MR. BURTON, MR. MICKELSON, MR. WILLGOHS, MR. OLSON, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

MINUTES:

The Board considered the minutes of the January 27, 2022, TFFR Board meeting.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A VOICE VOTE TO APPROVE THE JANUARY 27, 2022, MINUTES AS DISTRIBUTED.

AYES: MR. MICKELSON, MR. OLSON, TREASURER BEADLE, MR. BURTON, SUPT. BAESLER, MR. WILLGOHS, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

BOARD EDUCATION:

Cybersecurity:

Ms. Jessica Newby, NDIT, provided education on cybersecurity. Ms. Newby provided an overview of the services which the NDIT Cybersecurity Team provides including governance, risk, and compliance, and education and public awareness. ND prevents/detects over 4.5 billion cyber threats per year, including external threats from nation states, corporate espionage, and organized crime syndicates. Ms. Newby outlined the steps to prevent, reduce, and communicate risk and opportunities for cyber awareness education.

GOVERNANCE:

2023 Legislative Planning:

Ms. Murtha reviewed the proposed statute changes with the Board. Staff will submit all the approved statute changes as one bill to the Employee Benefits Programs Committee (EBPC), on behalf of the Board.

IT WAS MOVED BY MR. OLSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO AUTHORIZE STAFF TO SUBMIT THE REQUESTED STATUTORY CHANGES TO EBPC ON BEHALF OF THE TFFR BOARD.

AYES: TREASURER BEADLE, SUPT. BAESLER, MR. WILLGOHS, MR. OLSON, MR. BURTON, MR. MICKELSON, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

Pension Administration System (PAS) Project Update:

Ms. Murtha provided an update on the PAS project. The contract with Sagitec has been signed by RIO staff and planning for phase 3 has begun. Staff are working to identify timeframes for the next phase of the project including a kickoff with the vendor and consultant.

Strategic Planning Presentation:

Ms. Murtha shared the RIO strategic plan presentation that she had previously provided to the Governor's office. All RIO staff had input into the process for the strategy review. NDIT asked RIO to participate in their model strategic planning process. NDIT staff facilitated the process and assisted with the creation of the presentation. The plan looks ahead five to ten years. Staff identified five core priorities: communication, infrastructure, organizational culture, talent management, and technology-enabled processes. The action plan places items into four categories: experimental, aspirational, incremental, and evolutionary. Part of the strategic review was a workforce plan which staff developed with HRMS.

Actuarial Audit Discussion:
Ms. Murtha reviewed TFFR Governance Policy K which outlines the actuarial audit process. RIO Internal Audit recommends that an actuarial audit should occur every 5 years. Staff requested that the Board authorize staff to initiate a procurement process to select and approve the plan's actuarial audit.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. BURTON AND CARRIED BY A ROLL CALL VOTE TO AUTHORIZE RIO STAFF TO INITIATE THE PROCUREMENT PROCESS FOR AN ACTUARIAL AUDIT.

AYES: MR. WILLGOHS, MR. BURTON, MR. MICKELSON, SUPT. BAESLER, MR. OLSON, TREASURER BEADLE, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

Outreach Update:

Ms. Murtha provided the outreach programs update. She highlighted the new employer outreach which staff has been offering. TFFR Info Mixers is a new virtual outreach option for employers which will be offered some months throughout the school year for 45 minutes each. The first offering was in February and there were 42 in attendance.

The Board recessed at 2:59 p.m. and reconvened at 3:09 p.m.

REPORTS:

Quarterly Investment Report:

Mr. Posch provided the quarterly investment report as of January 31, 2022. TFFR outperformed the policy benchmark in the 3-year and 5-year periods ending January 31, 2022. Active management has enhanced net investment returns by roughly $35 million for the same 5-year period. TFFR has solid performance across multiple time frames relative to peers. Private equities allocation has increased from 7.6% in June 2021 to 9.3% in December 2021. During the third quarter of 2021, a new commitment was made to Adams Street's 2021 Global Fund. The infrastructure underweight was addressed with new commitments in 2021.

Annual Retirement Trends Report:

Ms. Murtha presented the annual Retirement Trends and Projections report as of March 2022. Of the 11,838 active TFFR members, 849 members are currently eligible to retire. In the last ten years, an average of 1,140 teachers have been eligible to retire with an average of 382 who actually retired each year. Approximately 2,200 to 2,400 active members are projected to retire in the next 10 years which averages about 230 each year.

Quarterly TFFR Ends Report:

Ms. Murtha shared the Quarterly Monitoring Report on TFFR Ends for the period ending December 31, 2021.

Quarterly Audit Report:

Ms. Sauter provided the quarterly Audit Activities Report which was reviewed and approved by the SIB Audit Committee on February 16, 2022. Internal Audit (IA) completed Phase I of agency succession planning. During this phase IA reviewed vacant positions to ensure proper documentation of responsibilities and risks facing the investment program. IA recommended documentation of succession planning for all executive staff identifying key responsibilities for each, a plan for the agency and each program if the top two positions were vacated simultaneously, to evaluate the purpose and duties of positions as they become vacant, and to review the agency's staffing needs biannually.

The Executive Limitations audit was completed, and IA is sufficiently satisfied that the Executive Director was in compliance with SIB Governance Manual Executive Limitation Policies A-1 through A-11 during calendar year 2021.

Executive Limitations/Staff Relations Report:

Ms. Murtha shared that Ms. Connie Flanagan has announced her retirement effective June 30, 2022. RIO has submitted a request to HRMS to have Ms. Flanagan's position reclassified to reflect the Chief Operating Officer duties she has taken on in addition to the Chief Financial Officer duties. As soon as that request is completed, the position will be posted. Staff hope to have interviews completed in May so the new person can start in June to allow for training before Ms. Flanagan leaves.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. OLSON AND CARRIED BY A VOICE VOTE TO APPROVE THE QUARTERLY INVESTMENT, ANNUAL RETIREMENT TRENDS, QUARTERLY TFFR ENDS, QUARTERLY AUDIT, AND EXECUTIVE LIMITATIONS/STAFF RELATIONS REPORTS.

AYES: MR. OLSON, MR. MICKELSON, SUPT. BAESLER, MR. WILLGOHS, TREASURER BEADLE, MR. BURTON, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

CONSENT AGENDA:

Pres. Lech and Mr. Mickelson declared a possible conflict of interest.

IT WAS MOVED BY TREAURER BEADLE AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO ALLOW PRES. LECH AND MR. MICKELSON TO VOTE ON DISABILITY 2022-2D.

AYES: MR. WILLGOHS, TREASURER BEADLE, SUPT. BAESLER, MR. BURTON, AND MR. OLSON
NAYS: NONE
MOTION CARRIED

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE CONSENT AGENDA – DISABILITY 2022-2D.

AYES: MR. BURTON, MR. WILLGOHS, MR. OLSON, TREASURER BEADLE, MR. MICKELSON, SUPT. BAESLER, AND PRES. LECH
NAYS: NONE
MOTION CARRIED

ADJOURNMENT:

With no further business to come before the Board, Pres. Lech adjourned the meeting at 4:06 p.m.

Respectfully Submitted:

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Dr. Rob Lech, President
Teachers' Fund for Retirement Board

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Missy Kopp
Reporting Secretary

North Dakota Teachers' Fund for Retirement

Plan Management Policy Score Update

Based on the July 1, 2021 Actuarial Valuation

April 21, 2022 / Matt Strom / Brad Ramirez

Segal

Summary Score based on July 1, 2021 Actuarial Valuation

- Composite summary score equal to 9

Assessment:

Summary score of 11 to 14:	**Objectives being met or likely to be met**
Summary score of 7 or 10:	**Objectives may be met over longer period**
Summary score of 4 to 6:	**Continue to monitor**
Summary score of 0 to 3:	**Changes should be considered**

Based on a summary score of 9: Yellow

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

The summary score has increased from a prior score of 6 based on last year's valuation results.

Plan Funding Policy vs. Plan Management Policy

The funding policy sets actuarially sound contribution rates

- TFFR's funding policy serves as a benchmark, which compares the actuarially determined contribution rate to the fixed employer contribution rate
- Actuarially determined contribution is equal to Normal Cost plus 22-year amortization of Unfunded Accrued Liability (as of 7/1/2021)
  - Amortization targets 100% funding in 22 years
    - Based on the 30-year closed period that began on July 1, 2013.

The plan management policy monitors the ongoing plan health

- Objective criteria have been established to evaluate health of TFFR
- Market volatility and contribution inadequacy risks are illustrated through stochastic modeling
- Board is able to evaluate the probabilities of future funded ratios
- Serves as advance warning tool

The TFFR plan management policy is a more robust way to evaluate the ongoing health and sustainability of TFFR.

Using the Plan Management Policy

- The Policy Score is updated subsequent to each valuation and experience study
- The Policy Score provides context for likelihood of future positive or negative events
  - For example, if funded ratio is projected to be at an unacceptable level with a high likelihood, the Board can explore ways to address this
- The Policy Score will be part of the actuarial analysis of proposed legislation
  - Will proposed legislation improve, retain, or worsen the Policy Score?

The July 1, 2021 Policy Score is determined on the basis of:
- **The July 1, 2021 actuarial valuation**
- **The Horizon Actuarial Services, LLC *Survey of Capital Market Assumptions (2021 Edition)***

Stochastic Modeling of Investment Return

- Modeling of future simulated return trials is based on:
  - The Horizon Survey of Capital Market Assumptions (2021 Edition)
    - This survey compiles and averages the capital market assumptions of 39* investment consultants
  - TFFR's current target asset allocation mapped to asset classes from the survey:

	Asset Class	Target Allocation
Fixed/Alternative	US Core	18.0%
	Real Estate	9.0%
	High Yield	8.0%
	Commodities/Timber	1.6%
	Infrastructure	7.4%
	Cash	1.0%
Equity	US Large Cap	21.6%
	US Small Cap	5.4%
	International Developed	13.5%
	Emerging Markets	4.5%
	Private Equity	10.0%

* Our analysis is based upon the 18 respondents that provided "long-term" (20+ years) assumptions

Capital Market Assumptions

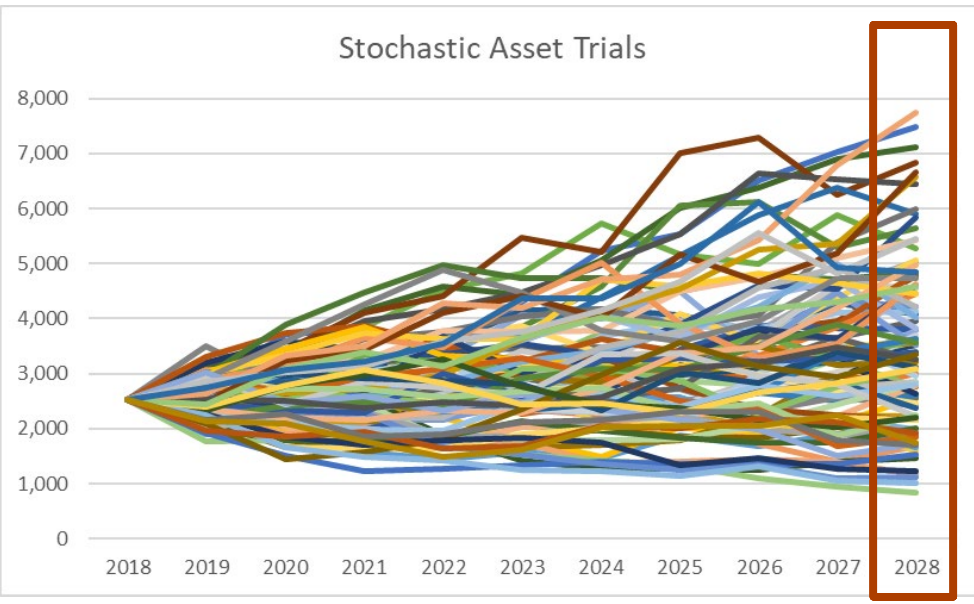
	Asset Class	Expected Return*	Standard Deviation	Target Allocation	Weighted Return
Fixed/Alternative	US Core	3.4%	5.5%	18.0%	0.61%
	Real Estate	7.7%	17.6%	9.0%	0.69%
	High Yield	5.5%	9.9%	8.0%	0.44%
	Commodities/Timber	5.5%	17.3%	1.6%	0.09%
	Infrastructure	8.1%	17.0%	7.4%	0.60%
	Cash	1.9%	1.3%	1.0%	0.02%
Equity	US Large Cap	8.0%	16.4%	21.6%	1.72%
	US Small Cap	9.0%	20.2%	5.4%	0.49%
	International Developed	8.8%	18.3%	13.5%	1.19%
	Emerging Markets	10.8%	24.3%	4.5%	0.49%
	Private Equity	12.3%	22.3%	10.0%	1.23%
	Total			**100.0%**	**7.57%**
	Adjustment to Geometric				(0.80%)
	Total Long-term Return				**6.77%**

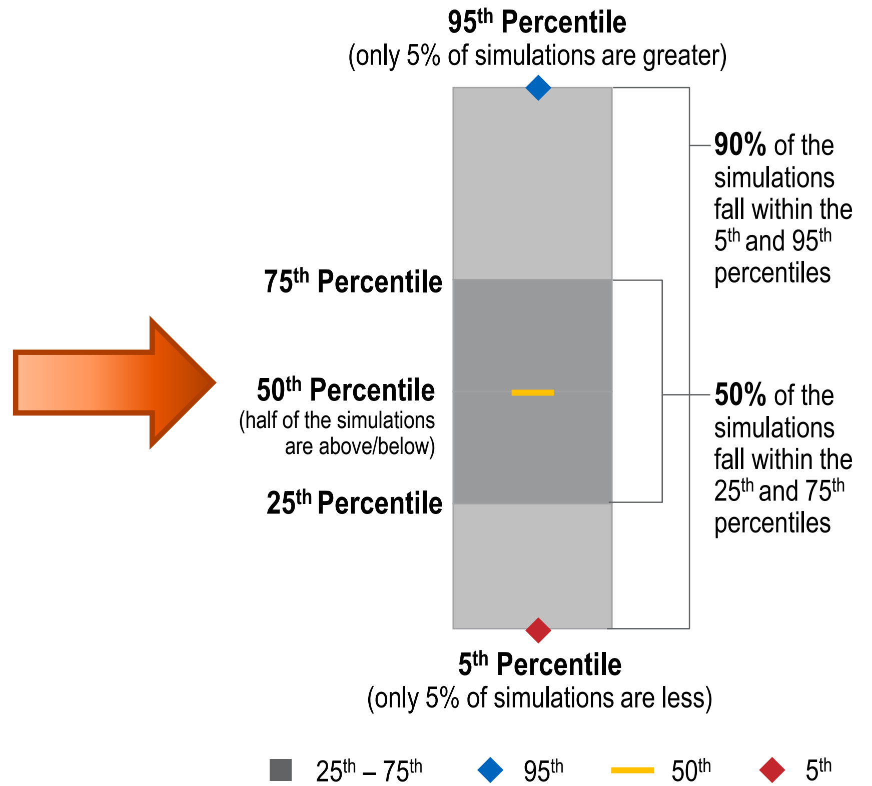
* Based on 20-year arithmetic assumptions and reflects long-term inflation of 2.24%

Segal

Summarizing Stochastic Results

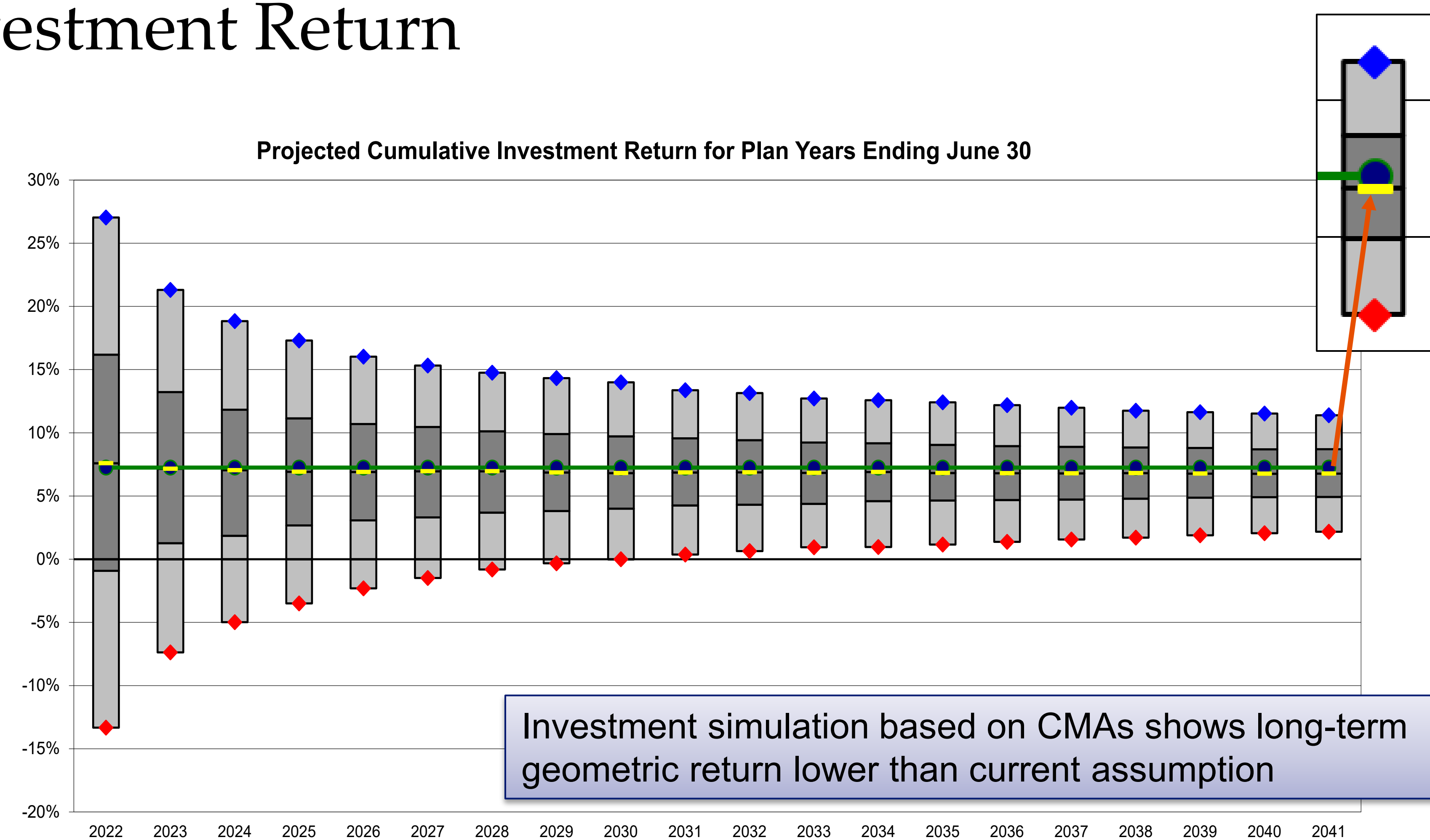
- The individual trials are grouped into percentiles and summarized as a range





- ➢ The median is represented by the yellow line at the center of the distribution
- ➢ The dark gray shaded rectangle represents 50% of all outcomes around the median
- ➢ The large, light gray rectangle (inclusive of the dark gray area) represents 90% of all outcomes around the median
- ➢ Other percentile results/probabilities are calculated from the underlying data

Investment Return



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
95th	27.0%	21.3%	18.8%	17.3%	16.0%	15.3%	14.8%	14.3%	14.0%	13.4%	13.1%	12.7%	12.6%	12.4%	12.2%	12.0%	11.8%	11.6%	11.5%	11.4%
75th	16.2%	13.2%	11.8%	11.1%	10.7%	10.5%	10.1%	9.9%	9.7%	9.6%	9.4%	9.2%	9.2%	9.0%	8.9%	8.9%	8.8%	8.8%	8.7%	8.7%
50th	7.6%	7.2%	7.0%	6.9%	6.9%	7.0%	7.0%	6.9%	6.8%	6.9%	6.9%	6.8%	6.9%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
25th	-0.9%	1.3%	1.9%	2.7%	3.1%	3.3%	3.7%	3.8%	4.0%	4.3%	4.3%	4.4%	4.6%	4.6%	4.7%	4.7%	4.8%	4.9%	4.9%	4.9%
5th	-13.3%	-7.4%	-5.0%	-3.5%	-2.3%	-1.5%	-0.8%	-0.3%	0.0%	0.4%	0.6%	0.9%	1.0%	1.2%	1.4%	1.6%	1.7%	1.9%	2.1%	2.2%
●	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%

● Current investment return assumption

Metrics for Plan Management Policy Scoring System

- **Current funded ratio**
  - The Fund's current funded ratio is one of the most visible metrics
  - A high current funded ratio should be recognized in the scoring
- **Downside funded ratio in 2030**
  - In the short-term, the Fund should avoid an "undesirable" funded ratio with relatively high probability
- **Target funded ratio in 2040**
  - Over a longer term, the Fund should be on the path to achieving its goals with reasonable probability
- **Improvement in funded ratio over a 10-year period**
  - Regardless of where the Fund sits today, it should seek an increasing funded ratio over time
- **Ability to recover from/withstand a market downturn**
  - In situations where the financial markets experience a downturn, the scoring should recognize when the funded ratio improves relative to the impact after the downturn

For purposes of the Policy scoring, the market value of assets is used when determining the funded ratio.

Policy Scoring System

Criteria 1

Based on current year funded ratio
- If current ratio is 90% or higher: **+3**
- If current ratio is between 80% to 90%: **+2**
- If current ratio is between 70% to 80%: **+1**
- If current ratio is less than 70%: **+0**

Criteria 2

Downside funded ratio in 2030
- Under 65% funded ratio with less than 20% probability: **+3**
- Under 65% funded ratio with less than 30% probability: **+2**
- Under 65% funded ratio with less than 40% probability: **+1**
- Under 65% funded ratio with more than 40% probability: **+0**

Criteria 3

Target funded ratio in 2040
- 85% or higher with more than 50% probability: **+4**
- 80% or higher with more than 50% probability: **+3**
- 75% or higher with more than 50% probability: **+2**
- 70% or higher with more than 50% probability: **+1**
- Not more than 70% with more than 50% probability: **+0**

Criteria 4

Improvement over 10 years
- Funded ratio improves by +5% over 10 years with 66% probability: **+2**
- Funded ratio improves by +5% over 10 years with 50% probability: **+1**
- Ratio does not improve by +5% over 10 years with 50% probability: **+0**

Criteria 5

Ability to recover from market downturn*
- Funded ratio after downturn improves by +5% over 10 years with 50% probability: **+2**
- Funded ratio after downturn improves by +5% over 10 years with 33% probability: **+1**
- Ratio after downturn does not improve by +5% over 10 years with 33% probability: **+0**

* "Market downturn" defined as a two-year compound average return of -10% or worse

Policy Scoring System *(continued)*

- Total summary score ranged from 0 to 14
  - Metrics focus on funded ratio measures
- Summary "health" is summed up as follows:
  - **Green** (score of 11 to 14) indicates *"objectives being met or likely to be met"*
  - **Yellow** (score of 7 to 10) indicates *"objectives may be met over longer period"*
  - **Orange** (score of 4 to 6) indicates *"continue to monitor"*
  - **Red** (score of 0 to 3) indicates *"changes should be considered"*

Policy Scoring System *(continued)*

Criteria 1

Current year funded ratio is 76%
- If current ratio is 90% or higher: **+3**
- If current ratio is between 80% to 90%: **+2**
- If current ratio is between 70% to 80%: **+1**
- If current ratio is less than 70%: **+0**

*Prior year: **+0** based on funded ratio of 63%*

+1

Criteria 2

24% probability of funded ratio <65% in 2030
- Under 65% funded ratio with less than 20% probability: **+3**
- Under 65% funded ratio with less than 30% probability: **+2**
- Under 65% funded ratio with less than 40% probability: **+1**
- Under 65% funded ratio with more than 40% probability: **+0**

*Prior year: **+1** based on 38% probability of funded ratio <65% in 2030*

+2

Criteria 3

56% probability of funded ratio >85% in 2040
- 85% or higher with more than 50% probability: **+4** (56% probability)
- 80% or higher with more than 50% probability: **+3** (60% probability)
- 75% or higher with more than 50% probability: **+2** (64% probability)
- 70% or higher with more than 50% probability: **+1** (69% probability)
- Not more than 70% with more than 50% probability: **+0**

*Prior year: **+3** based on 53% probability of funded ratio >80% in 2040*

+4

Criteria 4

57% probability of improvement over 10 years
- Funded ratio improves by +5% over 10 years with 66% probability: **+2**
- Funded ratio improves by +5% over 10 years with 50% probability: **+1**
- Ratio does not improve by +5% over 10 years with 50% probability: **+0**

+1

Criteria 5

42% probability of recovering from market downturn*
- Funded ratio after downturn improves by +5% over 10 years with 50% probability: **+2**
- Funded ratio after downturn improves by +5% over 10 years with 33% probability: **+1**
- Ratio after downturn does not improve by +5% over 10 years with 33% probability: **+0**

+1

+9

* 1,288 scenarios contain -10% average or worse over 2 years (in the first 10 years), 543 of which "recover"

Notable Differences from Prior Analysis

- The 2021 Horizon Survey CMAs result in a lower 50th percentile long-term geometric return compared to the 2020 study
  - 6.77% in 2021 versus 7.25% in the 2020 study
  - If the policy scoring were based on the 2020 CMA and asset allocation (shown in the appendix), the probability of a funded ratio less than 65% in 2030 would be 19% instead of 24%, which would result in a +3 instead of +2 for the Criteria 2 score. The other Criteria scores would remain unchanged based on the 2020 CMA and asset allocation.
- The market value return for the plan year ended June 30, 2021 was 26.1% compared to the assumed rate of 7.25%. This resulted in a significantly higher July 1, 2021, funded ratio than projected in the prior year
  - 75.7% actual funded ratio compared to a 64.1% projected funded ratio
- More scenarios hit 100% funding and trigged the sunset of contribution rates back to 7.75%, resulting in relatively less projected contributions.
- The net result is that the probabilities on which the scoring is based improved for Criteria 2 and 3 compared to the prior analysis.

Other External Factors

- Other factors outside of TFFR could have an effect on the directional trend of future Policy Scores, such as projected economic conditions, typical market cycles, and the North Dakota economy.
- The stochastic projections on which most of the scoring elements are based rely on composite capital market expectations of several investment consulting firms, generally from Q1 2021.
- Based on Segal Marco Advisor's Q1 2022 investment outlook, over the next 12 to 18 months, Segal Marco Advisors expects*:
  - U.S. large caps to lag long-term assumptions.
  - U.S. small caps and developed market stocks to be challenged.
  - Returns for U.S. core fixed income that are below long-term assumptions.
  - Private equity and real estate will perform in line with long-term expectations, while infrastructure and farmland have an above-normal return outlook.

* The views represented for each of the asset classes are relative to SMA 10-year capital market assumptions.

Other External Factors *(continued)*

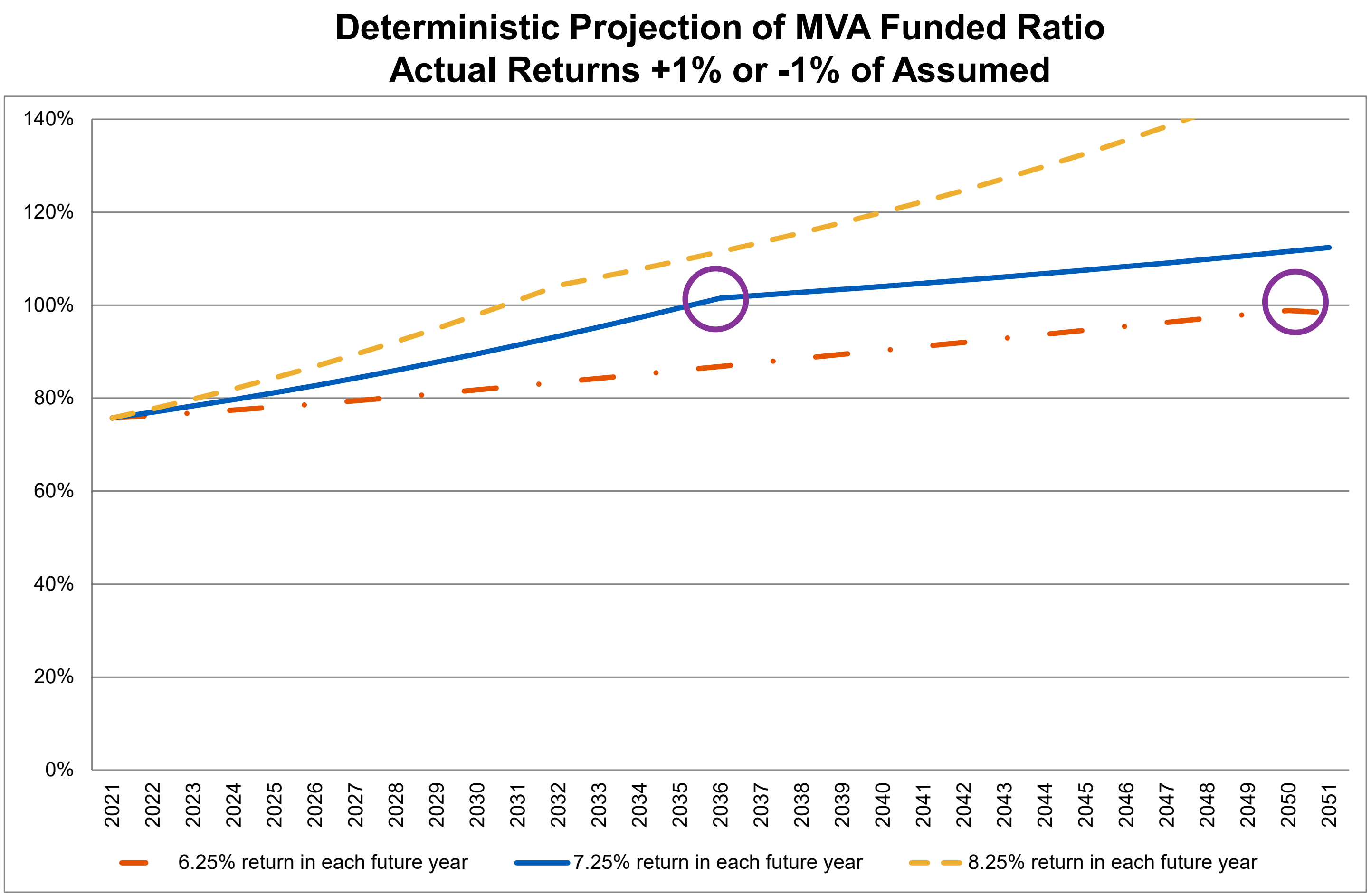
- There are other external forces not explicitly factored into the capital market assumptions, which may have a short-term impact on the Policy score:
  - The plan's funded status does not reflect short-term market fluctuations, as it is based on the market values on the last day of the plan year.
  - The projections on which this analysis was based do not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after July 1, 2021.
  - If inflation continues to increases in the short-term, the impact on the US equity market is likely to be a mixed bag, but history shows a correlation to high inflation and lower returns for the overall market in most periods, with increases in volatility.

Other External Factors *(continued)*

- NDSU released an economic outlook report in December 2021 with predictions for the 2022 calendar year.
  - Total wages and salaries have shown a rebound since last year's decline, and are expected to pick up pace in Q3 2022
  - Labor force has declined slightly over this past year, but this trend is expected to reverse in 2022.
  - However, Gross State Product is expected to decline during the first half of 2022, with later growth in the second half of 2022.
- Russia's recent invasion of Ukraine and the inevitable fallout from that situation has the potential to create "uncertainty" in the market, at best.
  - Governor Burgum has released a tally of state investments with ties to Russia, and the State Investment Board will be holding a special meeting to discuss the matter, OFAC sanctions, and "the evolving situation."
    - There will be a push for public pension systems to divest all Russian financial interests with Russian or Russia-affiliated entities.

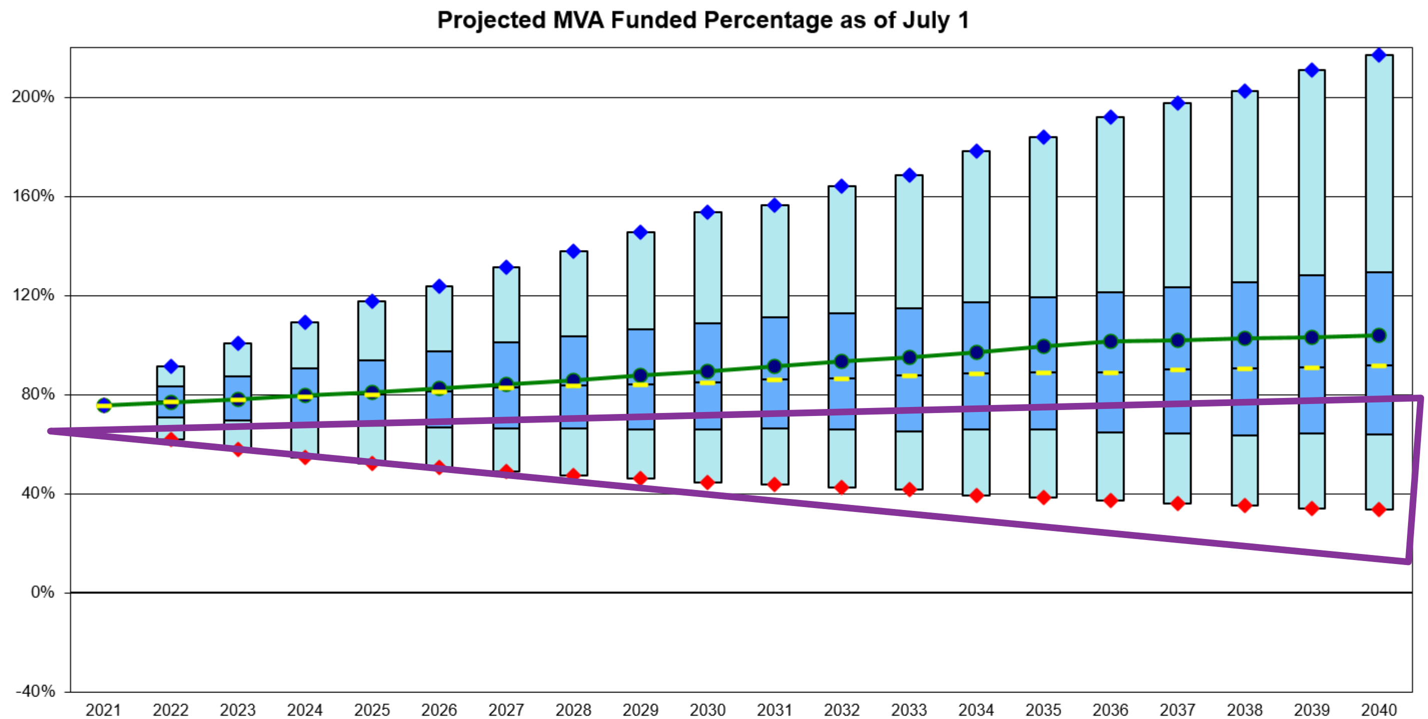
Additional Thoughts

- In the spirit of "market uncertainty," as presented in the July 1, 2021, actuarial valuation, sustained average returns of 1% below the 7.25% assumption would delay full funding by 14 years



Additional Thoughts *(continued)*

- The bottom quartile stochastic results show a best-case of a mild decline in the funded percentage over the next 20 years, with a worst-case of steady decline.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
◆ 95th	76%	91%	101%	109%	118%	124%	131%	138%	146%	153%	157%	164%	169%	178%	184%	192%	198%	203%	211%	217%
▬ 75th	76%	83%	87%	91%	94%	97%	101%	103%	106%	109%	111%	113%	115%	117%	119%	121%	123%	126%	128%	129%
50th	76%	77%	78%	79%	80%	81%	83%	84%	84%	85%	86%	87%	88%	89%	89%	89%	90%	91%	91%	92%
▬ 25th	76%	71%	70%	68%	68%	67%	66%	66%	66%	66%	66%	66%	65%	66%	66%	65%	64%	64%	64%	64%
◆ 5th	76%	62%	58%	55%	52%	51%	49%	48%	46%	45%	44%	42%	42%	39%	38%	37%	36%	35%	34%	34%
●	76%	77%	78%	80%	81%	83%	84%	86%	88%	90%	91%	93%	95%	97%	99%	102%	102%	103%	103%	104%

● Baseline deterministic projection using current 7.25% investment return assumption

Caveats

- *The projections are based on the results of the July 1, 2021, actuarial valuation performed for the Board of Trustees of the North Dakota Teachers' Fund for Retirement. The actuarial valuation report has information on the plan provisions, data, methods and assumptions used in the valuation.*
- *Projections, by their nature, are not a guarantee of future results. The projections modeled are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternate methodologies are used.*

Appendix – Prior Policy Scoring as of June 30, 2020

Criteria 1

Current year funded ratio is 63%
- If current ratio is 90% or higher: **+3**
- If current ratio is between 80% to 90%: **+2**
- If current ratio is between 70% to 80%: **+1**
- If current ratio is less than 70%: **+0**

+0

Criteria 2

38% probability of funded ratio <65% in 2030
- Under 65% funded ratio with less than 20% probability: **+3**
- Under 65% funded ratio with less than 30% probability: **+2**
- Under 65% funded ratio with less than 40% probability: **+1**
- Under 65% funded ratio with more than 40% probability: **+0**

+1

Criteria 3

53% probability of funded ratio >80% in 2040
- 85% or higher with more than 50% probability: **+4** (48% probability)
- 80% or higher with more than 50% probability: **+3** (53% probability)
- 75% or higher with more than 50% probability: **+2** (58% probability)
- 70% or higher with more than 50% probability: **+1** (63% probability)
- Not more than 70% with more than 50% probability: **+0**

+3

Criteria 4

57% probability of improvement over 10 years
- Funded ratio improves by +5% over 10 years with 66% probability: **+2**
- Funded ratio improves by +5% over 10 years with 50% probability: **+1**
- Ratio does not improve by +5% over 10 years with 50% probability: **+0**

+1

Criteria 5

42% probability of recovering from market downturn*
- Funded ratio after downturn improves by +5% over 10 years with 50% probability: **+2**
- Funded ratio after downturn improves by +5% over 10 years with 33% probability: **+1**
- Ratio after downturn does not improve by +5% over 10 years with 33% probability: **+0**

+1

+6

From the Plan Management Policy Score Update Presentation Dated March 3, 2021

* 921 scenarios contain -10% average or worse over 2 years (in the first 10 years), 384 of which "recover"

Appendix – 2020 Capital Market Assumptions & Target Allocation

	Asset Class	Expected Return*/	Standard Deviation	Target Allocation	Weighted Return
Fixed/Alternative	US Core	3.7%	5.5%	18.0%	0.67%
	Real Estate	7.9%	16.8%	9.0%	0.71%
	High Yield	6.1%	9.8%	8.0%	0.49%
	Commodities/Timber	5.6%	17.6%	1.9%	0.11%
	Infrastructure	8.5%	14.6%	7.1%	0.60%
	Cash	2.3%	1.8%	1.0%	0.02%
Equity	US Large Cap	8.4%	16.2%	20.5%	1.71%
	US Small Cap	9.5%	20.2%	5.5%	0.52%
	International Developed	9.1%	18.1%	13.6%	1.24%
	Emerging Markets	11.3%	24.2%	4.1%	0.46%
	Private Equity	12.5%	22.0%	11.3%	1.41%
	Total			**100.0%**	**7.96%**
	Adjustment to Geometric				(0.71%)
	Total Long-term Return				**7.25%**

* Based on 20-year arithmetic assumptions and reflects long-term inflation of 2.16%

PUBLIC PENSION PLAN COMPARISONS

April 2022

NORTH Dakota Be Legendary.

Teachers' Fund For Retirement

RETIREMENT & INVESTMENT

2020 PUBLIC FUND SURVEY

- Published December 2021 for FY 2020
  - **Survey results do not include FY 2021 data**

- Includes key characteristics of 119 large public retirement plans which represents about 85% of entire state and local government (SLG) retirement system community

RESPONSE TO MARKET DECLINE

2008-09 market decline, combined with other factors, increased plan's unfunded liabilities – and the cost of amortizing them - for most public pension plans around the country

Since 2009, most public plan sponsors have responded to higher pension costs by:

- **Raising contributions from employers**
- **Raising contributions from employees**
- **Reducing benefits (primarily for new hires) – higher retirement ages, lower retirement multipliers, increased vesting requirements, etc.**
- **Capping benefits or salaries; addressing salary spiking, etc.**
- **Offering DC or hybrid plan designs for new employees**
- **Postponing or reducing future retiree COLAs**

ACTUARIAL FUNDING LEVELS

Funding ratio is the most recognized measure of plan's financial health

Determined by dividing actuarial value of assets by liabilities

Both fully funded and underfunded plans rely on future contributions and investment returns

Most public pension benefits are prefunded

Pay-as-you-go is opposite of prefunded

ACTUARIAL FUNDING LEVELS

Investment returns have a substantial effect on a pension plan's funding level.

Other factors which affect a plan's funding level include:

- adequacy of employer and employee contributions
- demographic composition
- benefit levels
- actuarial methods and assumptions

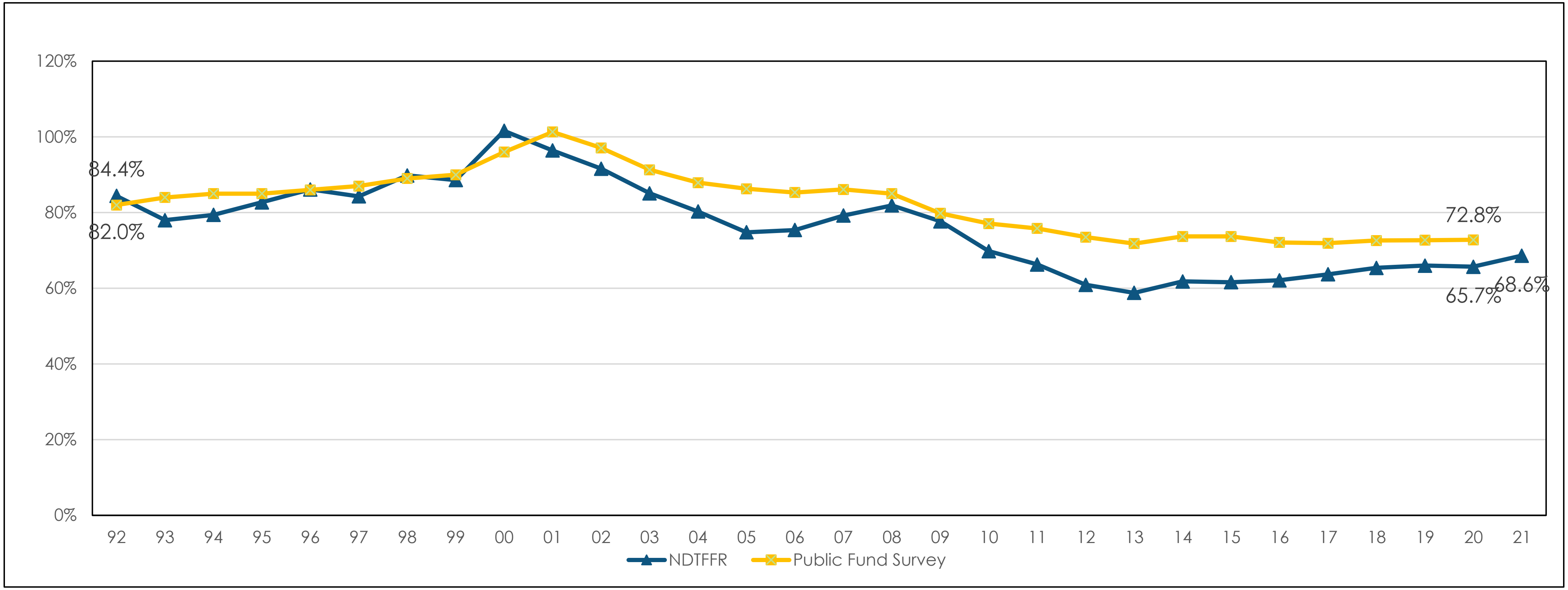
ACTUARIAL FUNDING LEVELS

According to the 2021 Public Fund Survey, public pension funding levels increased slightly from 72.2% in FY19 to 72.8% in FY20

NDTFFR funding levels decreased slightly from 66.0% in FY19 to 65.7% in FY20 (and increased nicely to 68.6% in FY21)

NDTFFR ranking, in terms of funding level, is approximately 83 of 119 plans in the 2020 Survey

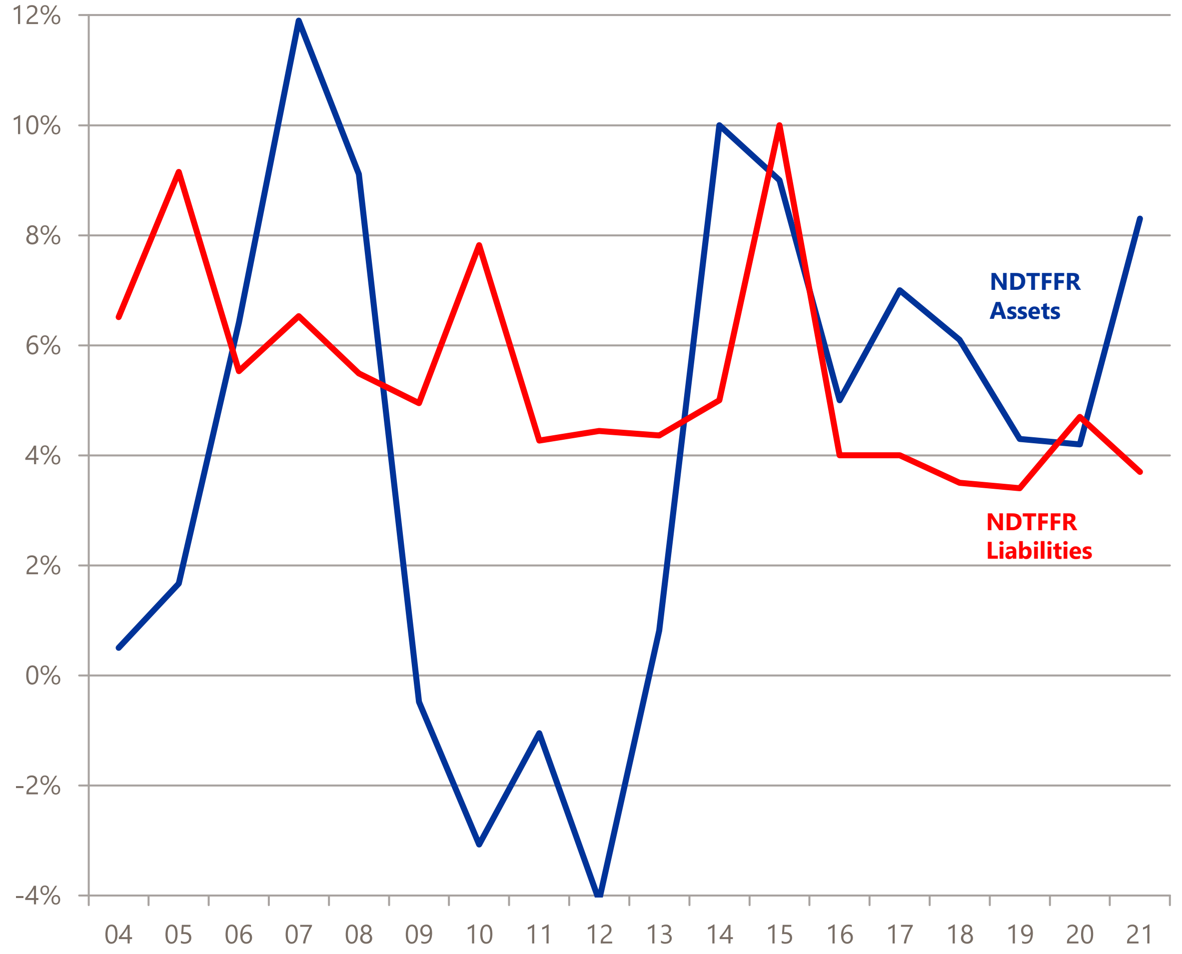
CHANGE IN ACTUARIAL FUNDING LEVELS



ACTUARIAL ASSETS & LIABILITIES

- For a pension plan's funding to improve, its AVA must grow faster than its AVL.
- For most plans in the PFS, **liability growth** remains lower than historical rates, at a median rate of below 4.0% in 2020
- **NDTFFR** liability growth has generally declined over the past decade, but changes in actuarial assumptions following experience studies in 2010, 2015, and 2020 increased liabilities as expected. Liability growth was 4.5% in FY20 (and 3.7% in FY21)
- Volatility in aggregate changes in **asset values** is muted compared to actual changes in market values of assets because plans phase in investment gains and losses over several years which smooths out market volatility
- **NDTFFR** asset growth followed similar trends as the PFS, although asset returns were more volatile

CHANGE IN ACTUARIAL ASSETS & LIABILITIES



MEMBERSHIP CHANGES

PFS shows the median rate of increase in **annuitants** decreased in FY20, declining in FY20 to its lowest level

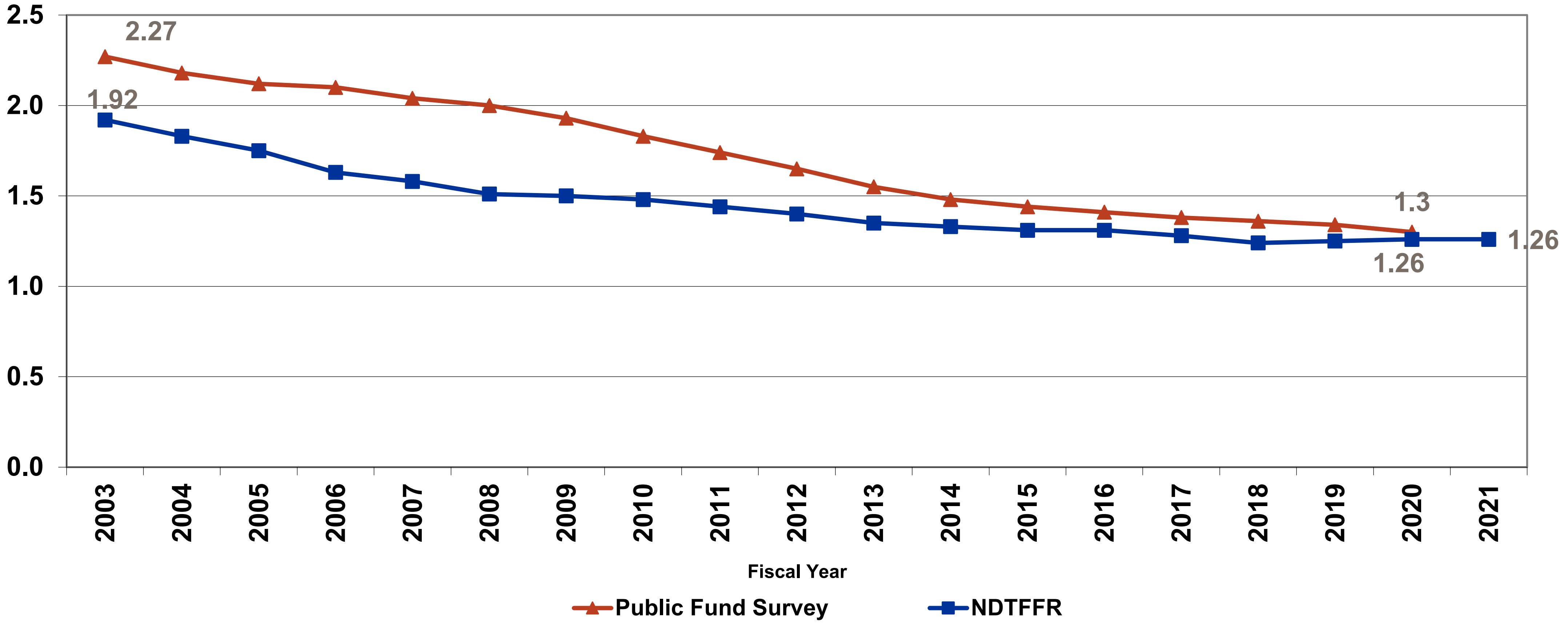
The number of **active members** grew for the 6th consecutive year in FY20, following 6 consecutive years of decline.

The ratio of active members to annuitants is continuing to decline. This ratio dropped from 1.34 in FY19 to 1.30 in FY20

For **NDTFFR** the ratio increased slightly from 1.25 in FY19 to 1.26 in FY20 (and remained at 1.26 in FY21)

Although a declining active-annuitant ratio does not, by itself, pose an actuarial or financial problem, when combined with a poorly funded plan with a high UAAL, a low or declining ratio of actives to annuitants can result in higher required pension costs (like NDTFFR)

RATIO OF ACTIVE MEMBERS TO ANNUITANTS



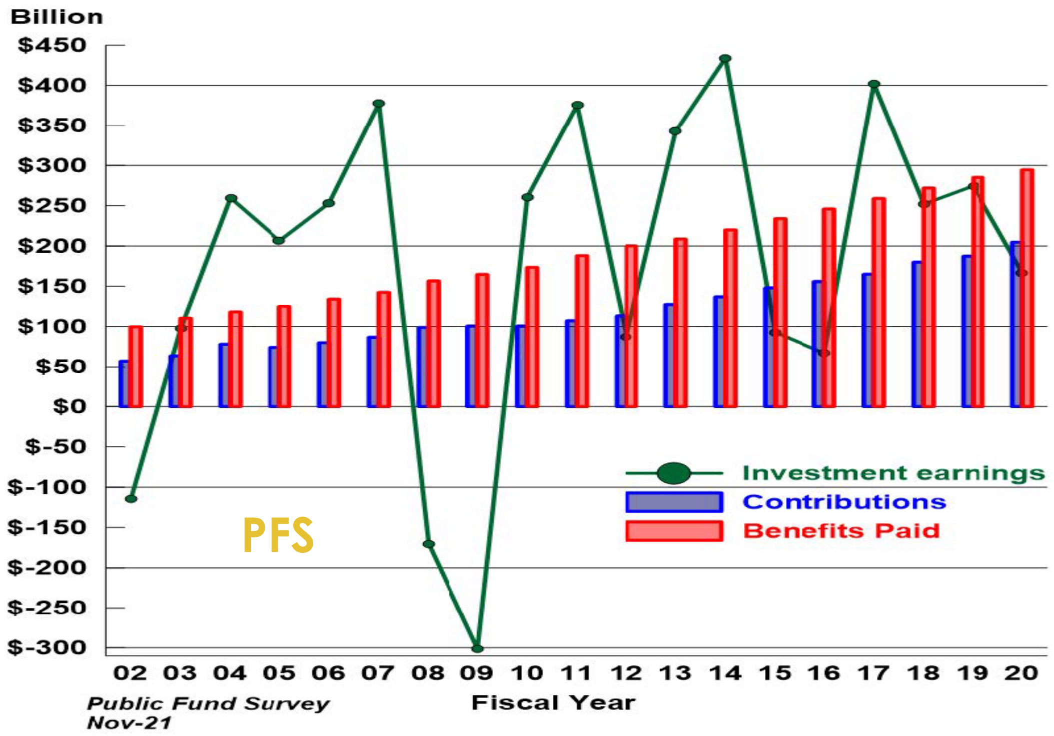
REVENUES, EXPENDITURES, & INVESTMENTS

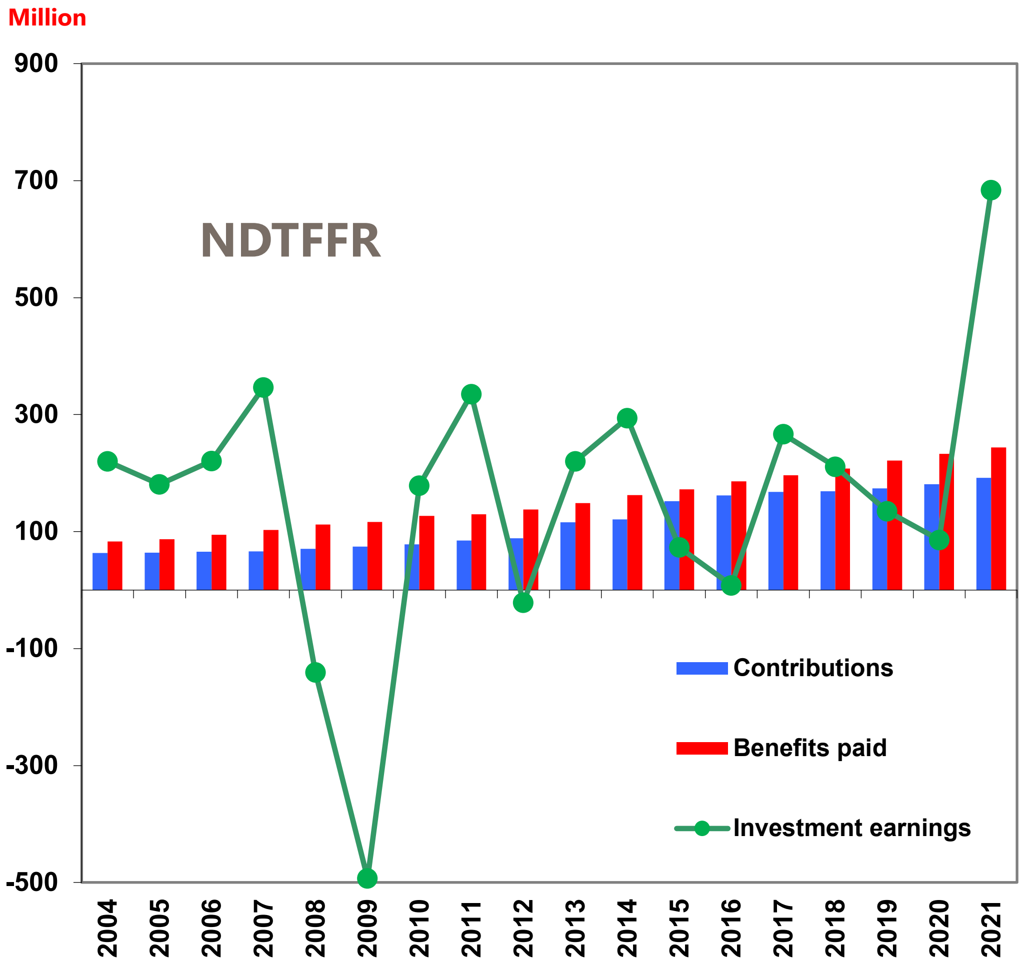
Most Plans pay out more each year than they receive in contributions

Benefits are paid from the pension's trust fund; pension payments are not paid from SLG operating budgets or general funds

Growth levels of contributions and Benefits are mostly stable and predictable; whereas investment earnings can fluctuate between extremes

REVENUES AND DISTRIBUTIONS





ANNUAL CHANGE IN PAYROLL

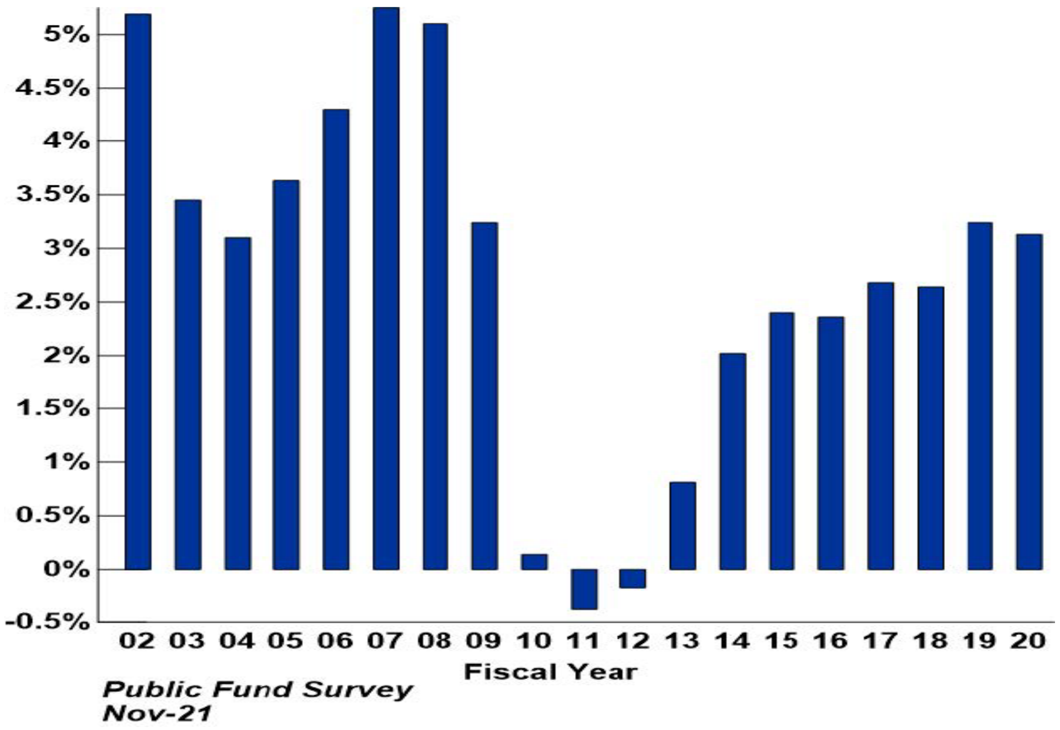
Median change in active member payroll was either negative or in decline from FY08 to FY12, and has increased slowly but steadily in subsequent years

The median change in payroll declined slightly in FY20 but remained above 3%

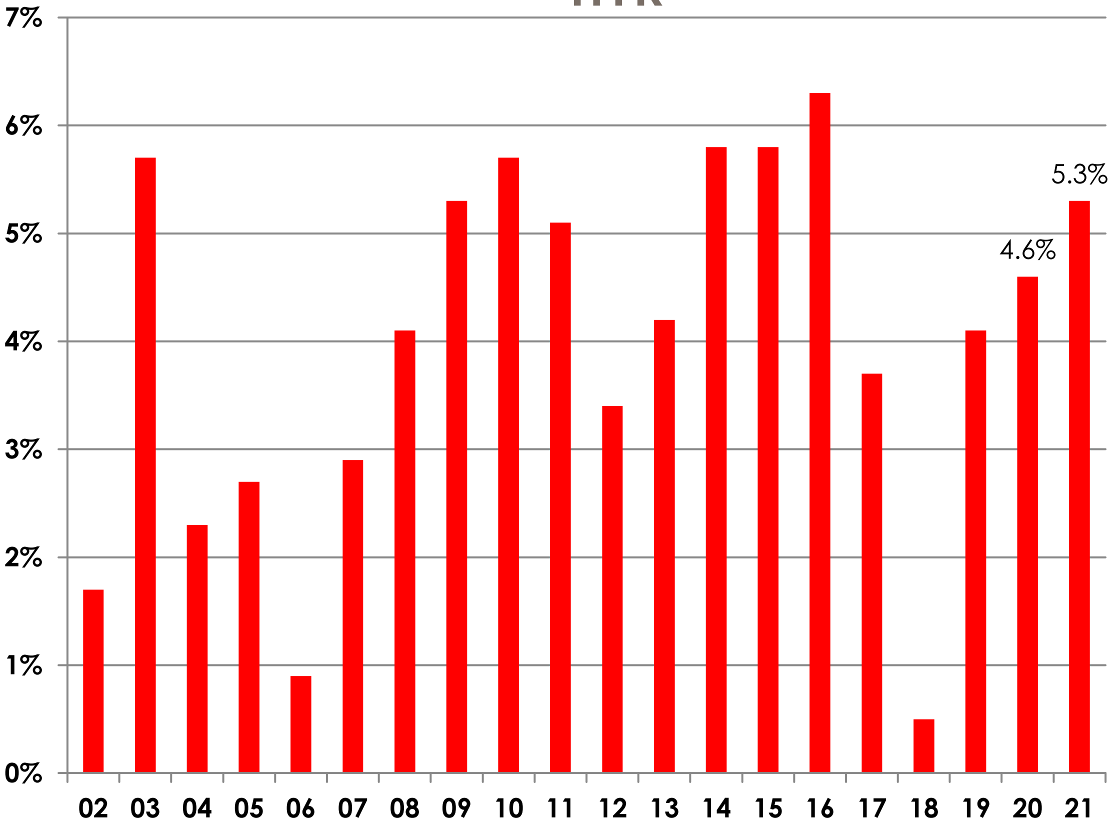
NDTFFR active payroll growth has not followed the experience of PFS and has generally been higher with the exception of FY18. NDTFFR payroll growth was 4.1% in FY19, and 4.6% in FY20 (and 5.3% in FY21)

ANNUAL CHANGE IN PAYROLL

PFS



TFFR



EXTERNAL CASH FLOW

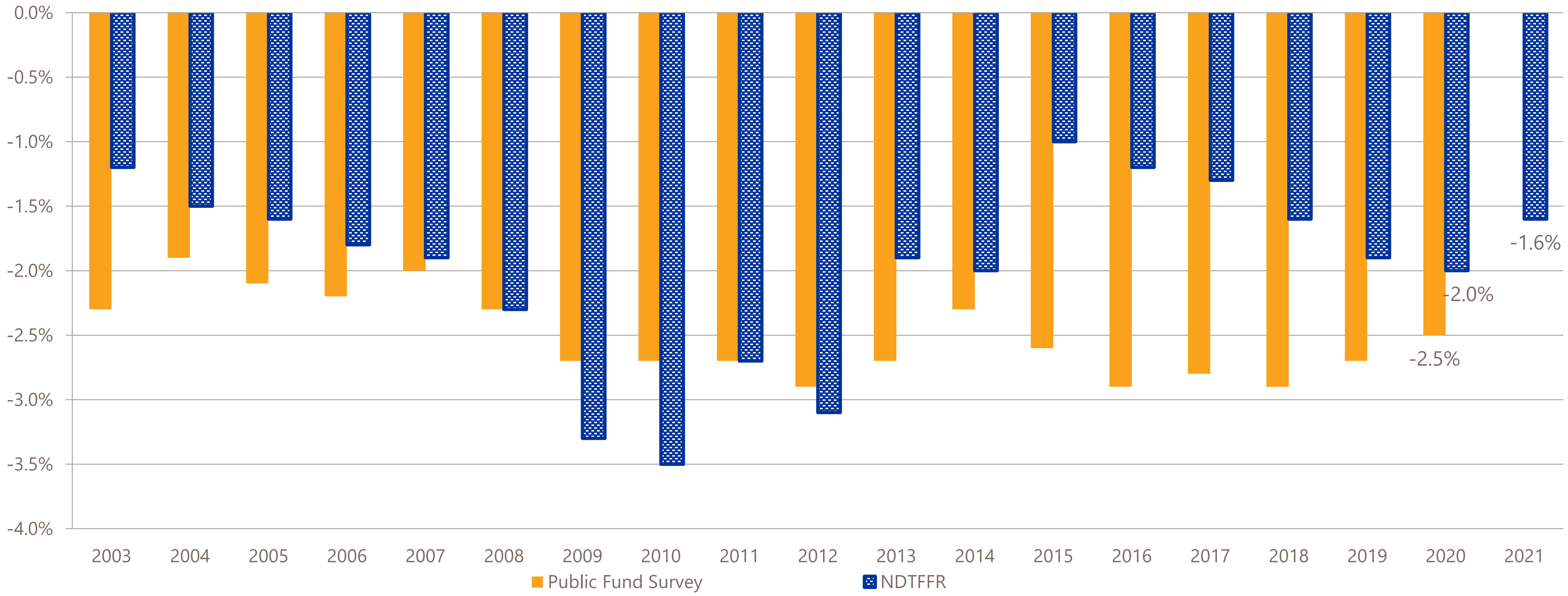
External cash flow is the difference between a system's revenue from contributions and payouts for benefits and administrative expenses, divided into the value of the system's assets. It excludes investment gains and losses

Nearly all systems in PFS have external cash flow that is negative, meaning they pay out more each year than they collect in contributions.

PFS median external cash flow increased from -2.7% in FY19 to -2.5% in FY20

NDTFFR external cash flow was -1.9% in FY19, declining to -2.0% in FY20 (and increasing to -1.6% in FY21)

EXTERNAL CASH FLOW



CONTRIBUTION RATES

Contribution rates differ on basis of Social Security participation

- **About 25% of employees of SLGs do not participate in Social Security**
- **About 40% of all public school teachers do not participate in Social Security**

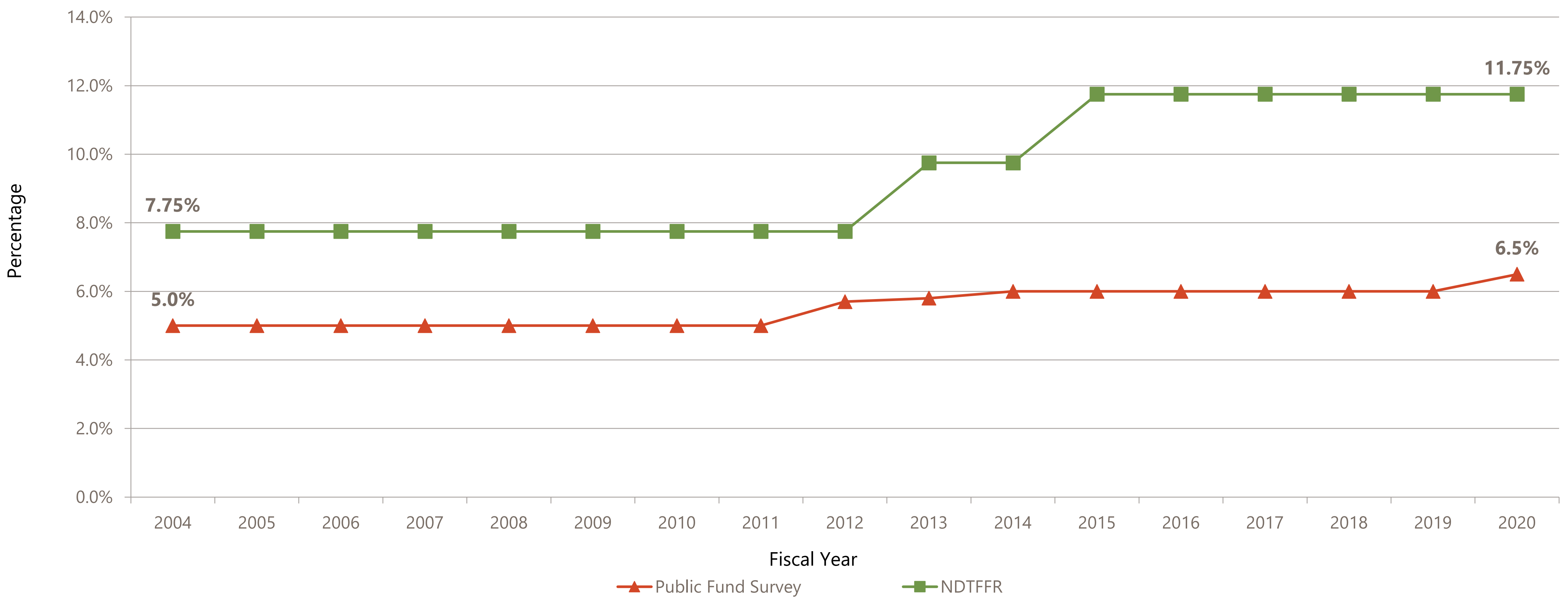
Median **employee** contribution rate increased to 6.25% in 2020 for Social Security eligible workers. This increase follows several years at 6.0%

- **NDTFFR employee rate is 11.75% (effective 7/1/14). Rate will be in effect until plan is 100% funded, then reduced to 7.75%**

Median **employer** contribution rate increased to 15.0% in 2020 for Social Security eligible workers

- **NDTFFR employer rate is 12.75% (effective 7/1/14). Rate will be in effect until plan is 100% funded, then reduced to 7.75%**

EMPLOYEE CONTRIBUTION RATES

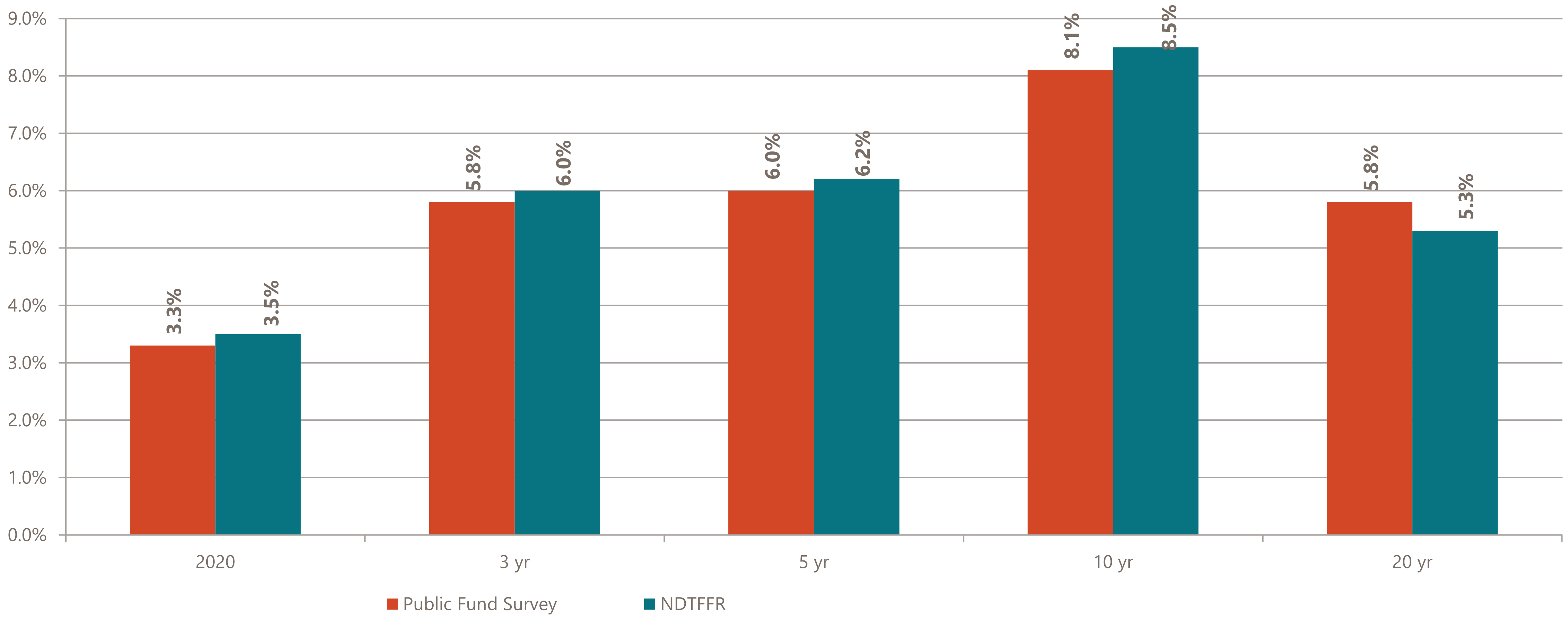


INVESTMENT RETURNS

Median investment return for plans with FY end date of 6/30/20 (about ¾ of PFS participants), was 3.3%

NDTFFR return was 3.5% for FY20 (and 26.5% for FY21)

ANNUAL INVESTMENT RETURNS (net)



ACTUARIAL ASSUMPTIONS

Actuarial valuations contain many assumptions:

Demographic

- Retirement rate
- Mortality rate
- Turnover rate
- Disability rate

Economic

- Investment return rate
- Inflation rate
- Salary increase rate

INVESTMENT RETURN ASSUMPTION

Of all assumptions, a public pension plan's investment return assumption has the greatest effect on the long-term cost of the plan

- Because most revenues of a typical public pension fund come from investment earnings, even a small change in a plan's investment return assumption can impose a disproportionate impact on a plan's funding level and cost

Investment assumption is made up of 2 components

- Inflation assumption
- Real return assumption which is investment return net of inflation

INVESTMENT RETURN ASSUMPTION

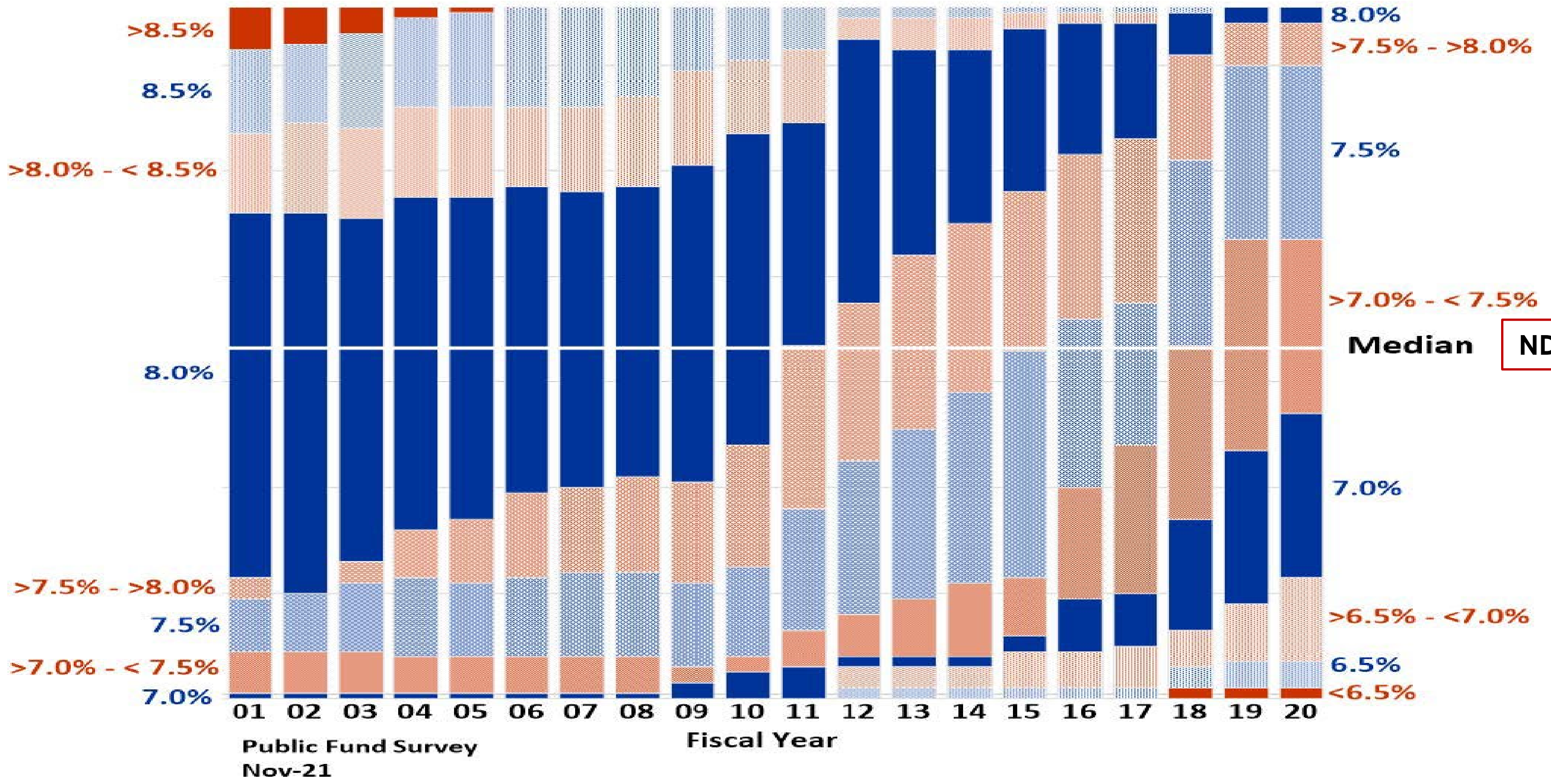
Until FY11, the most common investment return assumption used by public pension plans was **8.0%**

Since that time, nearly every plan in the survey has reduced their investment return assumption

Median investment return assumption is **7.25%**

NDTFFR investment return assumption was reduced from 7.75% to **7.25%** effective 7/1/20

INVESTMENT RETURN ASSUMPTION



NDTFFR 7.25%

ASSET ALLOCATION

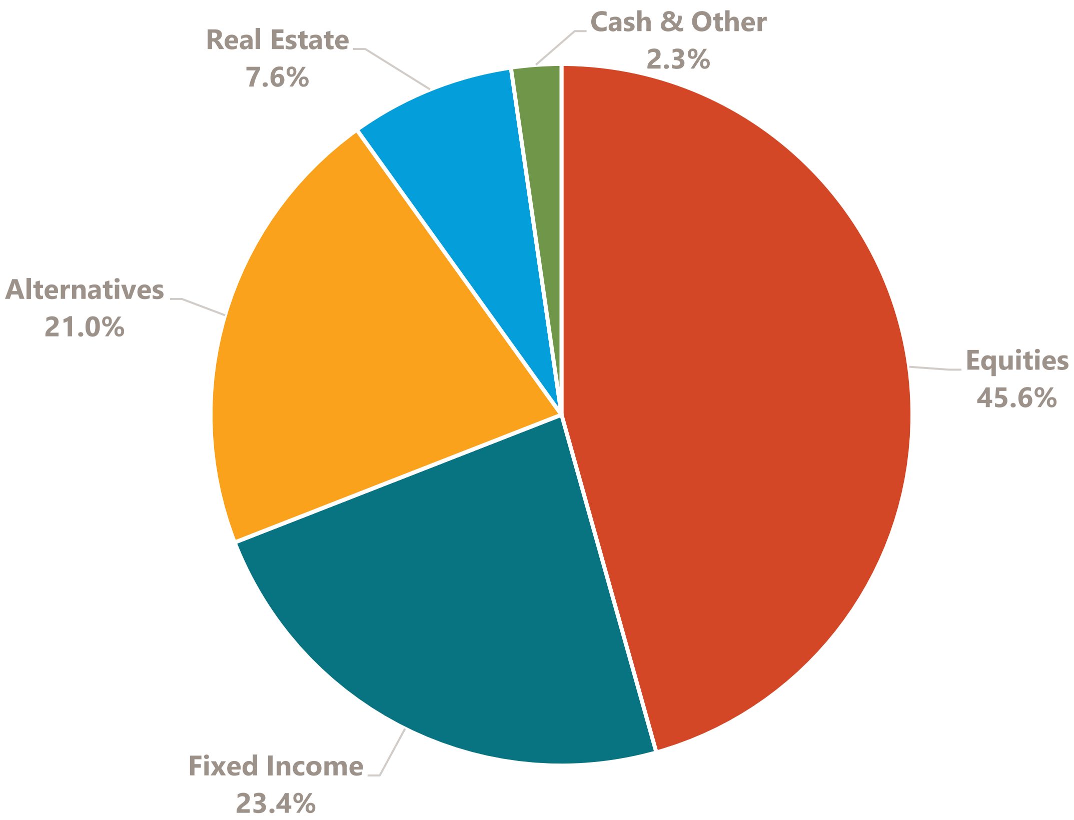
There were minor changes to PFS plan's asset allocations

- Public Equities declined to 45.6% (lowest since survey began)
- Fixed Income remains at 23%
- Real Estate has grown steadily and is still above 7%
- Alternatives (composed of primarily private equity and hedge funds) continues to grow steadily and is increased to above 20% for the first time
- Cash/Other is still about 2%

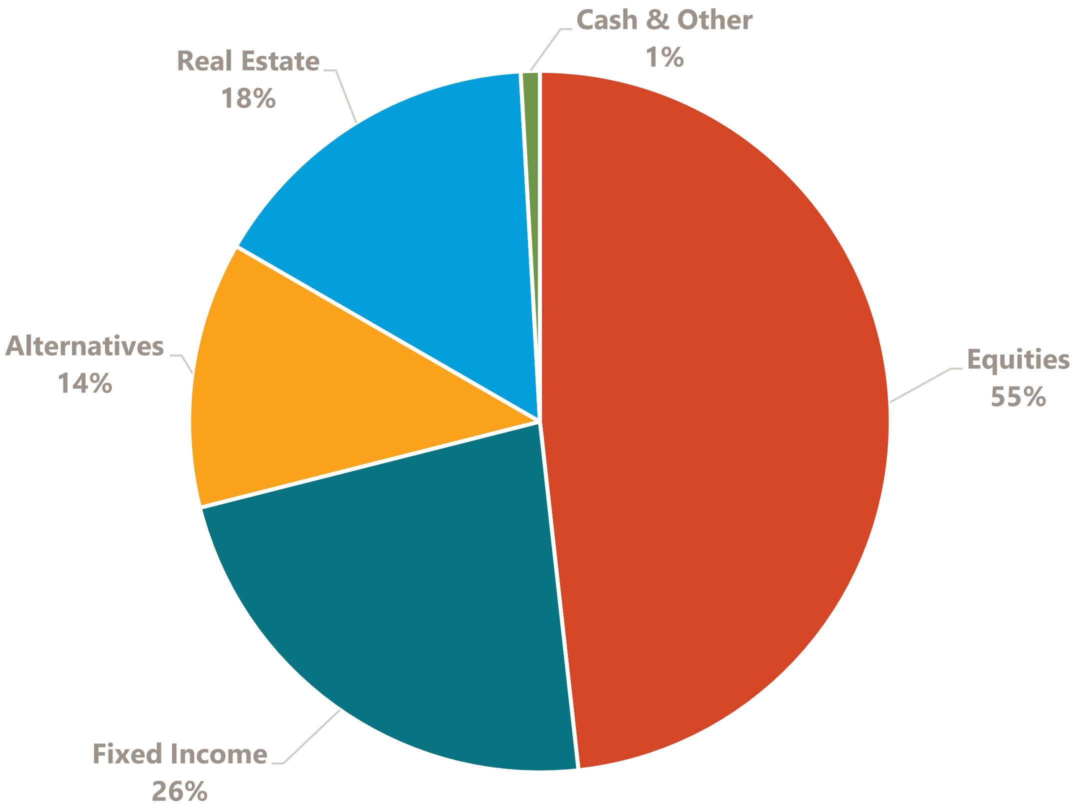
Compared to the 2020 PFS, **NDTFFR** has less in Cash and Alternatives, and more in Fixed Income, Real Estate and Equities

- Last NDTFFR Asset Liability Study (ALS) was conducted in 2020-21, with changes effective 7/1/20

ASSET ALLOCATION



Public Fund Survey
Fiscal Year 2020



NDTFFR (Target)
2020

QUESTIONS

TFFR Board Calendar and Education Plan 2022-23

<u>JULY 21, 2022 – 1 pm</u>
Election of Officers
Annual TFFR Program Review
Annual Governance Policy Review Report
Qtrly Investment Report (3/31)
Qtrly Audit Services Report (3/31)
Qtrly TFFR Ends Report (3/31)
Actuarial Audit RFP Review & Approval
Educ: Investments (manager selection process, due diligence, watch list) – RIO

<u>August 9, 2022</u>
TFFR GPR Comm: 10:00 a.m.

<u>SEPTEMBER 22, 2022 – 1 pm</u>
Annual Investment Report (6/30)
Annual Audit Services Report (6/30)
Annual Technology Report (6/30)
Annual Budget and Expense Report (6/30)
Qtrly TFFR Ends Report (6/30)
Actuarial Audit Finalist Interviews & Award
Educ: TFFR Retirement Benefit Options

<u>November 8, 2022</u>
TFFR GPR Comm: 3:30 p.m.

<u>November 17, 2022 – 1 pm</u>
2021 Actuarial Valuation Report
Annual Retiree Reemployment Report
Qtrly Investment Report (9/30)
Qtrly Audit Services Report (9/30)
Qtrly TFFR Ends Report (9/30)
Educ: Actuarial Issues & Trends

NOTE: Agenda items or education topics may be rearranged if needed.

<u>JANUARY 26, 2023 – 1 pm</u>
2021 GASB Report
2023 Legislative Update
Annual Retirement Ends Report (6/30)
Annual Strategic Communication Report (6/30)
Actuarial Services RFP Review & Approval
Educ: Public Retirement Plan Benefit Structures

<u>February 7, 2023</u>
TFFR GPR Comm: 3:30 p.m.

<u>FEBRUARY 16, 2023 – 2 pm (Tentative)</u>
2023 Legislative Update

<u>MARCH 23, 2023 – 1 pm</u>
2023 Legislative Update
Qtrly Investment Report (12/31)
Qtrly Audit Services Report (12/31)
Qtrly TFFR Ends Report (12/31)
Annual Retirement Trends Report (6/30)
Actuarial Services Finalist Interviews & Award

<u>APRIL 27, 2023 – 1 pm</u>
2023 Legislative Update
2023-24 Board Calendar and Educ Plan
Plan Management Policy Update
Annual Pension Plan Comparison Report

<u>May 9, 2023</u>
TFFR GPR Comm: 3:30 p.m.

<u>JUNE 15, 2023 – 1 pm</u>
Board Retreat
2025 Legislative Planning
Educ: Fiduciary Duties - AGO

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MEMORANDUM

TO: **TFFR Board**
FROM: **Jan Murtha, Executive Director**
DATE: **April 14 2022**
RE: **2023 Legislative Planning Update**

Pursuant to the direction of the Board at its March 2022 meeting, staff submitted the attached proposed statutory changes to Legislative Council prior to April 1, 2022. The Employee Benefits Programs Committee may first consider these proposed changes at its meeting currently scheduled for Tuesday, May 3, 2022 (link included below):

Employee Benefits Programs Committee | North Dakota Legislative Branch (ndlegis.gov)

Staff will provide the Board with an update at its next regularly scheduled meeting.

ACTION REQUESTED: Information Only.

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MEMORANDUM

TO: **TFFR Board**
FROM: **Jan Murtha, Executive Director**
DATE: **April 14, 2022**
RE: **PAS Project Update**

The following summarizes the efforts of RIO agency staff to complete Phase 2 and initiate Phase 3 of the project through the current date.

- All Phase 1 Deliverables have been accepted by Staff.

- Phase 2 has been completed, staff is coordinating with procurement collaboration and project management team to windup Phase 2 and accept any outstanding deliverables.

- The ESC approved contracting with Segal for assistance through Phase 3 of the PAS Project.

- The ESC awarded the vendor solution contract to Sagitec. The contract with Sagitec has been signed.

- The parties have scheduled an onsite "Kick-Off" meeting with staff for Monday May 16th, 2022 and Tuesday May 17th, 2022.

- Due to the need to prioritize resources for succession planning and all agency communication, Retirement Services staff reduced the frequency of meetings to discuss operation items and PAS related topic review from bi-monthly to monthly. Issue specific trainings to identify areas of improvement for both applicable processes and recommendations for changes to the law will resume once all vacancies in the division have been filled. Currently the only outstanding vacancy is the Deputy Executive Director – Chief Retirement Officer.

- NDIT, RIO staff, and Segal continue to meet weekly to discuss PAS project status and review progress on interim recommendations.

BOARD INFORMATION ONLY. No board action requested.

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MEMORANDUM

TO: **State Investment Board**
FROM: **Jan Murtha, Executive Director**
DATE: **April 21, 2022**
RE: **Executive Limitations/Staff Relations**

Ms. Murtha will provide a verbal update at the meeting on agency efforts to address current and future organizational risk through strategic planning. Including updates on the following topics:

1. **Retirements/Resignations/FTE's/Temporary Assistance**:

Additional updates regarding ongoing discussions with HRMS related to classification and reclassification requests will be provided at the meeting.

Employee Title	**Status**
Deputy ED – Chief Retirement Officer	Posted February 2022, closed 4/4/22. Initial Interviews to be scheduled within 2-3 weeks of April Board meeting. Final interviews will be arranged with TFFR Search committee.
Chief Fiscal Officer	Anticipate Posting in April, Filling by June. Reclassification request was submitted to include Chief Operating Officer duties (CFO/COO) and increase grade. HRMS verbally denied the classification request. RIO anticipates posting the position at the current grade and appealing the reclass decision once finalized.
Legal Intern	Interviews Conducted March 2022. Offer has been accepted. Anticipated to fill this summer as part of UND Law School Externship Program, with final details to be worked out with student.
Investment #1	Authorized by HB 1506 in 2021 Legislative Special Session: JDQ created, classification request pending HRMS.
Investment #2	Authorized by HB 1506 in 2021 Legislative Special Session: JDQ created, classification request pending HRMS.
Investment #3	Authorized by HB 1506 in 2021 Legislative Special Session: JDQ created, classification request pending HRMS.
Investment #4	Authorized by HB 1506 in 2021 Legislative Special Session: JDQ created, classification request pending HRMS.
Investment Reclassification Request #1	Reclassification of current Investment Analyst position to support new organization structure. Reclassification request is pending HRMS.
Accounting #1	Authorized by HB 1506 in 2021 Legislative Special Session: JDQ created, classification request approved by HRMS and position is posted with closing date May 2, 2022.
Programs Coordinator	Authorized by HB 1506 in 2021 Legislative Special Session: JDQ requirements currently under review.

2. **Current Procurement Activities including:**

- **PAS Project** – The ESC awarded the vendor solution contract to Sagitec. Onsite formal project Kick-off meeting is scheduled for May 16 & 17 with staff.

3. **Open Records & Media Requests**

- Between 2/13/22 to 4/13/22 The agency received and responded to 18 open records requests and 24 other comments or inquiries. These include requests or comments received from both media and private individuals.

4. **Email Accounts for Board Members (non-state employees)**

- In ongoing efforts to improve cybersecurity, state email accounts will be provided to all SIB, TFFR, and committee members that are non-state employees.

BOARD ACTION REQUESTED: Board Acceptance.

Consent agenda information will be sent to Board members via secure link.

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ND TFFR Board
Education Materials
April 2022

Attached for your reference is a link to the NASRA Public Funds Survey FY 2020 report discussed in the Pension Plan Comparison Report agenda item. The NASRA site also provides links to other Public Funds data such as data collected by the Center for Retirement Research at Boston College (CRR) and the MissionSquare Research Institute (*formerly the Center for State and Local Government Excellence*), a link for which is also included.

NASRA

Public Plans Data | The Public Plans Data includes detailed information on state and local pension and retiree health plans.