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

ND TFFR BOARD MEETING
Thursday, January 27, 2022, 1:00 p.m.
WSI Board Room (Virtual Host)
Teleconferencing – 701.328.0950 Participant Code – 291 081 900#
1600 E Century Ave, Bismarck, ND

AGENDA

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

II. ACCEPTANCE OF MINUTES (November 18, 2021, December 16, 2021)

III. Education (15-20 minutes)
- A. Open Records & Meetings – A.A.G. DePountis *Informational*

IV. GOVERNANCE (60 minutes)
- *A.* 2021 GASB Report – Matt Strom (Segal) *Board Action*
- *B.* 2023 Legislative Planning & GPR Committee Update – Ms. Murtha, Mr. Mickelson *Board Action*
- *C.* PAS Project Update – Ms. Murtha *Informational*
- *D.* Employer Model Compliance Issue* *Executive Session pursuant to NDCC 44-04-19.1, 44-04-19.2, and 15-39.1-30 for attorney consultation and to discuss confidential member information.*

V. REPORTS (60 minutes)
- *A.* Annual Retirement Ends Report– Ms. Weeks *Board Action*
- B. Annual Retiree Reemployment Report - Ms. Weeks *Board Action*
- C. Executive Limitations/Staff Relations Report – Ms. Murtha *Informational*

VI. OTHER BUSINESS
- A. Board Reading Materials – *Material References Included*
- B. Next Meeting:
  1. TFFR Regular Board Meeting Thursday, March 24, 2022 at 1:00 p.m.

VII. ADJOURNMENT

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

EXECUTIVE SUMMARY

TFFR Regular Meeting

January 27, 2022 – 1:00pm CT

I. **Agenda: The January Board Meeting will be held at the WSI Conference room to accommodate in person attendance; however, a link will also be provided so that Board members and other attendees may join via video conference.** The board member video link is included in the email with the Board materials. There will be a call-in number for the public.

II. **Minutes (Board Action):** The November 18, 2021 and December 16, 2021 Board meeting minutes are included for review and approval.

III. **Board Education – Open Records & Meetings:** A.A.G. DePountis will provide Board education on North Dakota Open Records & Meetings law.

IV. **A. 2021 GASB Report (Board Action)**: Segal will present the TFFR 2021 GASB report. Information relating to the GASB Audit report completed by RIO's external auditors Clifton Allen Larson completed is also provided. CLA issued an unmodified "clean" opinion and stated there were no material weaknesses or significant deficiencies identified.

B. 2023 Legislative Planning & GPR Committee Update (Board Action): The GPR Committee met and reviewed staff recommendations for potential changes to North Dakota Century Code related to TFFR plan administration. Mr. Mickelson and Ms. Murtha will review the GPR committee recommendations with the full TFFR Board.

C. PAS Project Update: Ms. Murtha will provide the Board with an update on the current status of the PAS project.

D. Employer Model Compliance issue (Board Action for Executive Session): Staff will provide the Board information on an Employer Model Compliance issue. Materials will be provided to the Board via a secure link.

V. **A-C. Reports (Board Action):** Staff will provide monitoring reports for TFFR Ends, Retiree Reemployment, and Executive Limitations/Staff Relations.

Adjournment.

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
NOVEMBER 18, 2021, BOARD MEETING

BOARD MEMBERS PRESENT:	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 Jan Murtha, Interim ED/CRO Matt Posch, Investment/Compliance Officer Sara Sauter, Supvr of Internal Audit Rachelle Smith, Retirement Assistant Stephanie Starr, Retirement Programs Spec Dottie Thorsen, Internal Auditor Tami Volkert, Employer Svs Coordinator Denise Weeks, Retirement Program Mgr
OTHERS PRESENT:	Dean DePountis, Atty. General's Office Tatsiana Dybal, Segal Kim Nicholl, Segal 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, November 18, 2021. The meeting was held in the Peace Garden Room, State Capitol, 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 November 18, 2021, meeting.

IT WAS MOVED BY MR. OLSON AND SECONDED BY TREASURER BEADLE 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 September 23, 2021, TFFR Board meeting.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. WILLGOHS AND CARRIED BY A VOICE VOTE TO APPROVE THE SEPTEMBER 23, 2021, 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:

Segal Mortality Tables:

Ms. Kim Nichols, Segal, presented information on the valuation process. Mr. Matt Strom, Segal, discussed the Society of Actuaries (SOA)/Retirement Plans Experience Committee (RPEC) Public Plans Mortality Study. TFFR is participating and will submit data from July 1, 2013-June 30, 2020. The goals of this study are to update the PUB-2010 process, analyze how certain factors affect public pension mortality and to compare recent mortality experience to previously published mortality tables. Mr. Strom also provided information on Club Vita, an international longevity analytics firm.

GOVERNANCE:

Actuarial Valuation:

Ms. Nicholl, Ms. Dybal, and Mr. Strom, Segal, presented the annual Actuarial Valuation Report as of July 1, 2021. Highlights include the following:

- The return on the market value of assets for the year ending June 30, 2021 was 26.1% (Segal calculation)
- Funded ratio increased from 65.7% (as of 7/1/2020) to 68.6% (as of 7/1/2021)
- Effective amortization period decreased from 24 years to 21 years
- Net impact on actuarily determined contribution (ADC) was a decrease from 13.19% of payroll to 12.37% of payroll
    - Based on the employer contribution rate of 12.75%, the contribution deficiency has decreased from 0.44% of payroll to a margin of 0.38% of payroll
- GASB Net Pension Liability decreased from $1.53 billion as of 6/30/2020, to $1.05 billion as of 6/30/2021

Board discussion followed.

IT WAS MOVED BY MR. BURTON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE 2021 TFFR ACTUARIAL VALUATION REPORT.

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

Employee Benefits Programs Committee (EBPC) Update:

Ms. Murtha provided an update from the EBPC meeting held on October 27, 2021. The TFFR valuation report was presented by Segal. Mr. Chin and Ms. Murtha presented information about the RIO agency and its operations, including an investment program performance update.

Legislative Special Session Update:

Ms. Murtha shared an update on bills from the special legislative session that had an impact on RIO. HB 1506 authorized RIO's six Full Time Equivalent (FTE) request and additional budget adjustments. HB 1512 expanded the membership of the Legacy and Budget Stabilization Fund Advisory Board. SB 2345 expanded the list of funds that the SIB is required to invest by statute to include the Water Projects Stabilization Fund.

Outreach Update:

Ms. Weeks provided an update on outreach activities. RIO's Retirement Program Specialists continue to offer virtual individual counseling sessions for TFFR members. Virtual Group Benefit Counseling sessions have been offered to TFFR members with 15 sessions scheduled throughout the fall. RIO has updated its phone system to allow for more efficient voicemail options and a quicker response time to member calls. Staff is planning to offer 30-minute lunch and learn sessions and other education opportunities for TFFR Employers. Staff are also planning to offer 60-minute retirement education opportunities for TFFR members.

Pension Administration System (PAS) Project Update:

Ms. Murtha provided an update on the PAS project. The project is currently in the contract negotiation phase of the procurement process, prior to award. The activities during this portion are confidential.

The Board recessed at 3:02 p.m. and reconvened at 3:16 p.m.

REPORTS:

Quarterly Investment Report:

Mr. Posch provided the quarterly investment and performance update as of September 30, 2021. TFFR outperformed the policy benchmark in the 5-year period ended September 30, 2021. Underperformance for the quarter was driven by the strong performance of the real asset benchmarks. Reporting for private markets fund (including real assets) lag; some funds' performance for the quarter is held at 0. Active management has enhanced net investment returns by roughly $25 million for the 5-years ended September 30, 2021. The private equities allocation has increase from 7.6% in June 2021, to 8.2% in September 2021. Infrastructure underweight has been addressed with recent commitments. Risk has increased because of the pandemic. Increased risk is not driven by changes in the portfolio, but by an increase in market risk. Staff monitors the portfolio allocations and thoroughly rebalances to ensure exposures and allocations remain within targets.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. OLSON AND CARRIED BY A ROLL CALL VOTE TO APPROVE THE QUARTERLY INVESTMENT REPORT.

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

ABSENT: SUPT. BAESLER

Quarterly TFFR Ends:

Ms. Weeks reviewed the Quarterly TFFR Ends Report. Staff continues to work on the Salary Verification Audit that was issued by Internal Audit. Follow up with employers was needed on 19 of the 65 accounts that were looked at. Errors included reporting errors and model incompliance. There was an increase in members who have logged into their TFFR online accounts with over 7,000 users as of October 31, 2021.

IT WAS MOVED BY MR. OLSON AND SECONDED BY MR. BURTON AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE QUARTERLY TFFR ENDS REPORT.

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

Quarterly Internal Audit (IA) Report:

Ms. Sauter provided the quarterly IA report. After the retirement/resignation of staff members, IA has begun work on succession planning. During the first quarter IA reviewed and analyzed the responsibilities for three of the vacant positions to ensure that current requirements and deadlines continue to be met. The responsibilities were classified by function and forwarded to RIO management to assign to the newly organized positions. The annual Employer Participant Data/Salary Verification Review report on fiscal year 2018-19 was issued on May 11, 2021 and was presented to the SIB Audit Committee. IA had three recommendations in the report and has been working with Retirement Services on their response. Work on the TFFR File Maintenance Audit began in June 2021 and continued into August 2021. Due to the Succession Planning review the fieldwork was suspended, and the audit has not been completed.

IT WAS MOVED BY TREASURER BEADLE AND SECONDED BY MR. WILLGOHS AND CARRIED BY A ROLL CALL VOTE TO ACCEPT THE QUARTERLY AUDIT REPORT.

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

Executive Limitations/Staff Relations:

Ms. Murtha provided an update on the RIO facility move which will occur on November 23, 2021. A staff engagement survey was conducted in October and results were provided to the Board. Ms. Murtha provided a summary of staffing changes that have occurred and the work happening to fill openings. Current procurement activities include the Pension Administration System (PAS) project which is in the pre-award, contract negotiation stage and an RFP for temporary assistance firms that can provide contract services for additional investment personnel.

ADJOURNMENT:

With no further business to come before the Board, Pres. Lech adjourned the meeting at 4:01 p.m.

Respectfully Submitted:

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

_____
Missy Kopp
Reporting Secretary

NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
MINUTES OF THE
DECEMBER 16, 2021, SPECIAL BOARD MEETING

BOARD MEMBERS PRESENT: 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
Jan Murtha, Interim ED/CRO
Ann Nagel, Investment Accountant
Rich Nagel, NDIT
Matt Posch, Investment/Compliance Officer
Sara Sauter, Supvr of Internal Audit
Rachelle Smith, Retirement Assistant
Stephanie Starr, Retirement Programs Spec
Dottie Thorsen, Internal Auditor
Tami Volkert, Employer Svs Coordinator
Denise Weeks, Retirement Program Mgr

CALL TO ORDER:

Dr. Rob Lech, President of the Teachers' Fund for Retirement (TFFR) Board of Trustees, called the meeting to order at 1:30 p.m. on Thursday, December 16, 2021. The meeting was held at the Retirement and Investment Office (RIO).

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 December 16, 2021, meeting.

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

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

GOVERNANCE:

Executive Director (ED) Transition:

Ms. Murtha reviewed the transition timeline since the departure of Mr. Hunter in June 2021. The SIB offered Ms. Murtha the ED position at the November 19, 2021 meeting. With that position change, there is now a vacancy for the DED/CRO position. Ms. Murtha will continue to fill the CRO role until the vacancy is filled. Staff recommend that the Board direct the Governance and Policy Review (GPR) Committee to review relevant governance policies related to the DED/CRO position and make recommendations to the full Board.

IT WAS MOVED BY MR. MICKELSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO DIRECT THE GPR COMMITTEE TO REVIEW GOVERNANCE POLICIES RELATED TO THE DED/CRO POSITION AND TO BRING RECOMMENDATIONS TO THE TFFR BOARD.

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

Appointment of Executive Search Committee:

Ms. Murtha reviewed the TFFR Governance Policy which outlines how the Executive Search Committee (ESC) would be established. The Board may authorize, and the Board President may appoint an ESC to assist the Board during the executive search process. During the last search in 2019-20, two Board members and the ED participated in the DED/CRO search and interview process.

IT WAS MOVED BY MR. BURTON AND SECONDED BY MR. MICKELSON AND CARRIED BY A ROLL CALL VOTE TO CREATE AN EXECUTIVE SEARCH COMMITTEE TO ASSIST THE BOARD WITH THE EXECUTIVE SEARCH PROCESS.

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

Deputy Executive Director (DED)/Chief Retirement Officer (CRO Search:

Ms. Murtha outlined the agency organization background, prior executive search experiences, and options and recommendations for the current search. Staff recommended posting the position in collaboration with HRMS. In the last search, this method produced sufficiently qualified candidates and expedited the interim period. The implementation phase of the Pension Administration System (PAS) project is expected to begin in early 2022 resulting in additional workload for the Retirement Services (RS) division; filling the DED/CRO position will enable RS to dedicate more staff resources to the PAS effort.

IT WAS MOVED BY MR. OLSON AND SECONDED BY TREASURER BEADLE AND CARRIED BY A ROLL CALL VOTE TO POST THE POSITION IN COLLABORATION WITH HRMS.

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

ADJOURNMENT:

With no further business to come before the Board, Pres. Lech adjourned the meeting at 1:57 p.m.

Respectfully Submitted:

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

_____
Missy Kopp
Reporting Secretary

Open Records and Open Meetings (TFFR)

Dean DePountis
Assistant Attorney General

What is subject to open record laws?

- All **records**
- In the possession of a **public entity**
- Regarding **public business**

N.D.C.C. § 44-04-17.1(16)

What is a Record?

- **Recorded information** of any kind, regardless of the physical form or characteristic by which the information is stored, recorded, or reproduced . . .

N.D.C.C. § 44-04-17.1(16)

What is Public Business?

- **All matters** that relate or may foreseeably relate in any way to . . . the performance of the public entity's governmental functions, including any matter over which the public entity has supervision, control, jurisdiction, or advisory power; or…the public entity's use of public funds.

What is protected?

- All public business records are open unless a law specifically provides the record is protected.
- Protected means the record is "not subject to Article XI of the North Dakota Constitution," "not an open record," "**exempt**," or "**confidential**."

Examples of Records that are generally open

- Personnel file, including:
  - *Job performance*
  - *Evaluations*
- Business-related e-mails
- Records on personal devices, including:
  - *Cell phones (e-mail, messages, photos)*
  - *Computers (e-mail, documents, etc.)*
- Contracts with a public entity, including:
  - *Prices*
  - *Costs*

Exempt

- May be released.
- Public entity has discretion – needs entity action.
- May be called a "closed" record.
- Not against the law to release an exempt record.

Confidential

- Cannot be released.
- Public entity has no discretion.
- Can only be released pursuant to a statute.
- Class C felony to knowingly release confidential records.

N.D.C.C. § 44-04-17.1(5) and N.D.C.C. § 44-04-17.1(3)

Exempt

Public employee personal information, including:

- Month/Day of Birth;
- Home Address;
- Personal Phone Numbers;
- Photograph;
- DMV and Employee ID Numbers;
- Payroll Deduction Information;
- Dependent/emergency contact information;
- Any credit, debit, or electronic fund transfer card number;
- Any account number at a bank or other financial institution; and
- Type of leave taken, and leave applied for but not yet taken.

Confidential

- Social Security Numbers;
- Computer Passwords;
- Employee use of Employee Assistance Programs; and
- BCI background checks.

2021 Open Record Legislative Changes

- Medical records, or a record containing medical information, in possession of a public entity are exempt. (N.D.C.C. § 44-04-18.32)
- Applications (N.D.C.C. § 44-04-18.27)
  - *Applications and any records related to the applications which contain information that could reasonably be used to identify an applicant are exempt. Finalists' information remains open.*
- Active litigation records (N.D.C.C. § 44-04-19.1(12))
  - *Records obtained, compiled, or prepared by a public entity or the attorney representing a public entity for the purpose of litigation, unless the records already have been filed publicly or the litigation is completed, are exempt.*

Record Examples

- Trade secret, proprietary, commercial, and financial information is confidential – "if it is of a privileged nature." N.D.C.C § 44-04-18.4(1).
- Economic development records and information may be exempt. N.D.C.C § 44-04-18.4(5).
- Bids received by a public entity in response to an invitation for bids by the public entity are exempt until all of the bids have been received and opened by the public entity. N.D.C.C § 44-04-18.4(6)(a).
- Proposals received by a public entity in response to a request for proposals are exempt records until a notice of intent to award is issued. N.D.C.C § 44-04-18.4(6)(b).
- Records included with any bid or proposal naming and generally describing the entity submitting the proposal are open. N.D.C.C § 44-04-18.4(6)(c).

N.D.C.C. 15-39.1-30. Confidentiality of records

- All records relating to the retirement benefits of a member or a beneficiary under this chapter are confidential and are not public records.

N.D.C.C. 15-39.1-30 -The information and records may be disclosed, under rules adopted by the board, only to:

- 1. A person to whom the teacher has given written consent to have the information disclosed.
- 2. A person legally representing the teacher, upon proper proof of representation, and unless the teacher specifically withholds consent.
- 3. A person authorized by a court order.
- 4. A member's participating employer, limited to information concerning the member's years of service credit, years of age, employer and employee contribution amounts, and salary. The board may share other types of information as needed by the employer to validate the employer's compliance with existing state or federal law. Any information provided to the member's participating employer under this subsection must remain confidential except as provided in subsection 6.

N.D.C.C. 15-39.1-30 -The information and records may be disclosed, under rules adopted by the board, only to:

- 5. The administrative staff of the public employees retirement system for purposes relating to membership and benefits determination.
- 6. State or federal agencies for the purpose of validating member eligibility or employer compliance with existing state or federal law.
- 7. Member interest groups approved by the board, limited to information concerning the member's death.
- 8. A government child support enforcement agency for purposes of establishing paternity or establishing, modifying, or enforcing a child support obligation of the member.
- 9. The member's spouse or former spouse, that individual's legal representative, and the judge presiding over the member's dissolution proceeding for purposes of aiding the parties in drafting a qualified domestic relations order under section 15-39.1-12.2. The information disclosed under this subsection must be limited to information necessary for drafting the order.

N.D.C.C. 15-39.1-30 -The information and records may be disclosed, under rules adopted by the board, only to:

- 10. Beneficiaries designated by a participating member or a former participating member to receive benefits after the member's death, but only after the member's death. Information relating to beneficiaries may be disclosed to other beneficiaries of the same member.
- 11. The general public, but only after the board has been unable to locate the member for a period in excess of two years, and limited to the member's name and the fact that the board has been unable to locate the member.
- 12. Any person if the board determines disclosure is necessary for treatment, operational, or payment purposes, including the completion of necessary documents.
- 13. A person if the information relates to an employer service purchase, but the information must be limited to the member's name and employer, the retirementprogram in which the member participates, the amount of service credit purchased by the employer, and the total amount expended by the employer for that service credit purchase. Information identified under this subsection may only be obtained from the member's employer.

What is a Meeting?

- A **quorum** of
- A **governing body**
- Of a **public entity**
- Discussing **public business**

N.D.C.C. § 44-04-17.1(9)

What is a Quorum?

- **One-half or more of the members** of the governing body, or any smaller number if sufficient for a governing body to transact business on behalf of the public entity.

Committees

- Committee: **Two or more people** acting collectively pursuant to authority delegated to that group by the governing body.
  - *Includes delegation of <u>any</u> public business, including information gathering.*
  - *Applies even if the public business being discussed was not delegated to the committee by the governing body, so long as it relates to the business of the public entity.*

Key questions:

- Did the governing body delegate any sort of authority?
- Is the committee doing something the governing body could do itself?

Committees

It does not matter…

- If the committee does not have final authority;
- If the committee is just "brainstorming" or "fact-finding;"
- If the committee is only intended to recommend something to the governing body;
- If the subject being discussed is not a subject within the authority delegated to the committee.

…a quorum of a committee is still a meeting.

A Meeting can happen…

- By conference call;
- On very short notice;
- Over video conference; or
- At a restaurant

Anywhere a quorum is present.

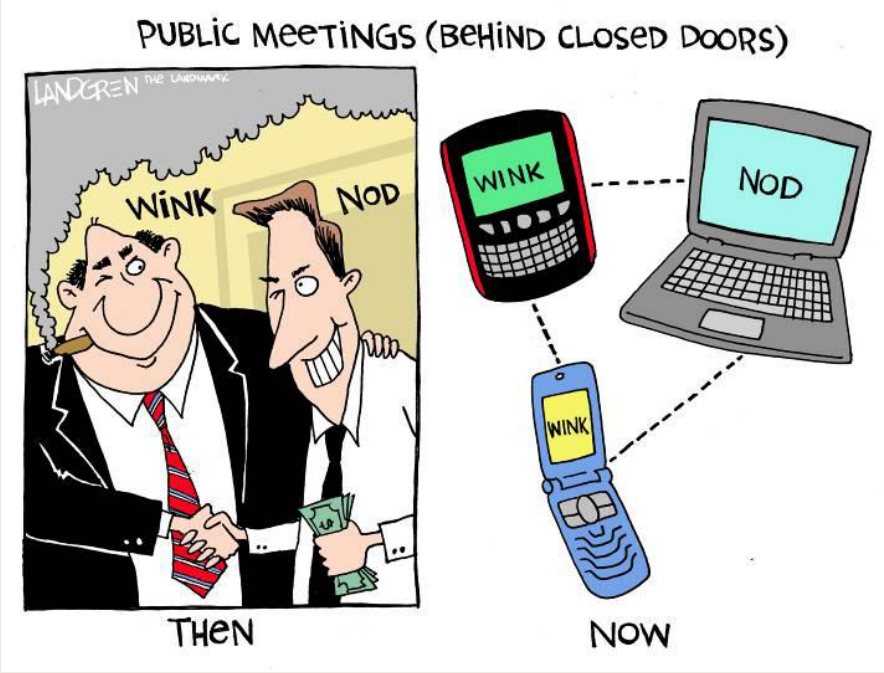
Open Meeting Exceptions

- Chance or social gatherings where no public business is considered or discussed.
- Emergency operations during a disaster or emergency declared under section 37-17.1-10 or an equivalent ordinance if a quorum of the members of the governing body are present but are not discussing public business as the full governing body or as a task force or working group.
- Attendance at meetings of national, regional, or state associations.
- Training seminars where no public business is discussed.
- 2021 Legislative change: Administration of examinations by a regulatory board when no other public business is considered or discussed.

N.D.C.C. § 44-04-17.1(9)(b)

Common Violations

- Using technology to circumvent open meetings laws.



Common Violations

Using emails or other communication methods where a quorum is involved to discuss public business.

- Permissible
  - *To provide information for members to review before a meeting;*
  - *To set a meeting date.*
- Violation
  - *A member sharing thoughts, ideas, or opinions to a quorum of a public entity or a committee, even if no one responds.*
  - *Hitting "reply all" to a permissible communication to hold a discussion or provide an opinion.*

Common Violations

- Telephone straw polling (no matter who does the polling).
- Serial meetings - a series of smaller gatherings which collectively constitute a quorum - and public business is discussed.

2021 Open Meetings Legislative Change

Access to Public Meetings

- If a meeting is held in-person, the meeting room must be accessible to, and the size of the room must accommodate, the number of persons reasonably expected to attend the meeting.
- If the meeting is held by electronic means, the electronic capacity must accommodate the number of persons reasonably expected to attend the meeting remotely.

N.D.C.C. § 44-04-19(2)

Executive Session

Must be legally authorized:

- Most common: exempt/confidential records, attorney consultation, and negotiation strategy.
- Most common violation: closing meeting to discuss personnel matters.

Executive Session

Attorney consultation – 2 Ways

1. Advice regarding and in anticipation of reasonably predictable or pending litigation or adversarial administrative proceedings **OR**
2. To receive attorney's advice and guidance on the legal risks, strengths, and weaknesses of an action of a public entity, which, if held in public, **would have an adverse fiscal effect**.

- Remember: Just because attorney is sitting in does not automatically make it an attorney consultation!

Executive Session

Negotiation strategy

- Must relate to strategy or provide instructions to an attorney or other negotiator,
- Regarding a pending claim, litigation, adversarial administrative proceedings, or contracts,
- Which is currently being negotiated or for which negotiation is reasonably likely to occur in the immediate future,
- **AND** must have adverse fiscal effect if the discussion would be held in public.

N.D.C.C. § 44-04-19.1(9)

Executive Session Procedure

- Convene in open meeting;
- Announce in open meeting the topics to be discussed and legal authority;
  - *Note: To discuss confidential information – no motion necessary. To discuss exempt/closed information - motion to enter executive session.*
- Record the session (keep for 6 months);
- Note time of executive session and who attended in minutes;
- Only discuss topics in announcement;
- (usually) Final action in open meeting.

Resources

Attorney General's website: www.attorneygeneral.nd.gov.

- Open Records & Meetings Laws
  - *Manuals & Guides*
    - Open Records Guide ("One pager")
    - Template for Responding to Records Requests
    - Open Meetings Guide ("One pager")
    - Sample Form for Closing Executive Session
    - Sample Meeting Notice
    - Notice Checklist

Thank you!

North Dakota Teachers' Fund for Retirement

GASB 67 & 68

Accounting Standards for Public Pension Plans
Review of Fiscal 2021 GASB Reporting

January 27, 2022 / Matt Strom / Teresa Knapp

Segal

Agenda

GASB Objectives and Goals

Net Pension Liability

Pension Expense

Cost-Sharing Plans

Disclosure Information

GASB Objectives and Goals

- **Financial Reporting Focus**
  - Focus is on pension obligation, changes in that obligation, and attribution of expense – *not funding policies*
  - Provides a short-term snapshot of funded status based on market assets and a blended discount rate
- **Long-Term Nature of Governments**
  - Cost of services to long-term operation
  - "Inter-period equity" matches current period resources and costs
- **Employer-Employee Exchange**
  - Employer incurs an obligation to its employees for pension benefits
  - Transaction is in context of a career-long relationship

Net Pension Liability

- **Must disclose a Net Pension Liability (NPL), which is the Total Pension Liability (TPL) less the Market Value of Assets (MVA)**
  - Similar to Unfunded Actuarial Accrued Liability (UAAL) on a market value basis
    - Will be volatile from year to year
    - Asset smoothing only allowed in the pension expense component
  - Must be reported on employer's balance sheet
- **Total Pension Liability component determined by:**
  - "Entry Age" actuarial cost method
    - The value of projected benefits allocated over past, present, and future periods as a level percentage of payroll
  - The consideration of a "blended" discount rate
- **Must also disclose NPL sensitivity to changes in the discount rate**

Net Pension Liability – "Blended" Discount Rate

- **Based on a projection of benefit payments and assets**
  - Benefit payment projection is for current members
  - Asset projection is based on investment return assumption (7.25%) and contributions on behalf of current members
    - **Exclude** contributions intended to fund the service cost for future employees
- **If projected assets are always sufficient to pay projected benefit payments the GASB discount rate is equal to the investment return assumption**
- **If not, a blended discount rate must be used**

"Blended" Discount Rate *(continued)*

- **Blended discount rate mechanics**
  - For projected benefit payments that are covered by projected assets, the expected return assumption is used
  - For projected benefit payments that are not covered by projected assets, the 20-year AA/Aa tax-exempt municipal bond index is used (2.16% as of June 30, 2021)
  - The date at which projected assets are not sufficient to cover projected benefit payments is called the "crossover date"
- **Solve for a single rate that gives the same total present value**
  - Use that single equivalent rate to calculate the TPL
- **As of June 30, 2021, TFFR does <u>not</u> have a crossover date**
  - TPL is based on the investment return assumption

Net Pension Liability ($ in millions)

Collective TFFR	June 30, 2020	June 30, 2021
Total Pension Liability at 7.25%	$4,181	$4,336
Fiduciary Net Plan Position (i.e., MVA)	2,651	3,282
Net Pension Liability (NPL)	1,531	1,054
Sensitivity to changes in discount rate		
• 1% decrease at 6.25%	$2,039	$1,582
• Current discount rate at 7.25%	1,531	1,054
• 1% increase at 8.25%	1,108	615

Reconciliation of Collective Net Pension Liability

$ in millions

	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
Balance as of June 30, 2020	$4,181	$2,650	$1,531
Changes for the year			
Service cost	87		87
Interest	301		301
Difference between expected and actual experience	8		8
Contributions – employer		98	(98)
Contributions – member		91	(91)
Contributions – purchased service credit and other		3	(3)
Net investment income		684	(684)
Benefit payments and refunds of contributions	(241)	(241)	-
Administrative expense		(3)	3
Changes of assumptions	-		-
Change of benefit terms	-		-
Net changes	155	632	(477)
Balance as of June 30, 2021	$4,336	$3,282	$1,054

Note: numbers may not add due to rounding

Pension Expense

- **GASB Pension Expense is the change in NPL each year, with deferred recognition of certain elements**
- **Components of Pension Expense include:**
  - Service cost (i.e., normal cost)
  - Interest on the Total Pension Liability
  - Projected investment returns
  - Employee contributions
  - Administrative expenses
  - Differences between actual and projected investment returns over the past year
    - Smoothed over 5 years
  - Differences due to changes in actuarial assumptions, changes in plan provisions, and actuarial gains and losses
    - Smoothed over average expected remaining service lives of active **and** inactive members (including retirees)

Reconciliation of Collective Net Pension Liability

Items that flow directly through pension expense

Items that receive deferred recognition

Item that is not a part of pension expense

$ in millions

	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
Balance as of June 30, 2020	$4,181	$2,650	$1,531
Changes for the year			
Service cost	87		87
Interest	301		301
Difference between expected and actual experience	8		8
Contributions – employer		98	(98)
Contributions – member		91	(91)
Contributions – purchased service credit and other		3	(3)
Net investment income		684	(684)
Benefit payments and refunds of contributions	(241)	(241)	-
Administrative expense		(3)	3
Changes of assumptions	-		-
Change of benefit terms	-		-
Net changes	155	632	(477)
Balance as of June 30, 2021	$4,336	$3,282	$1,054

Employer contributions made during the measurement period directly reduce NPL

Actual investment income is split between projected earnings and investment gain/loss

Note: numbers may not add due to rounding

Pension Expense
Deferred Outflows and Inflows

- **Deferred portion of changes in NPL are shown as "Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions"**
  - Created for the purpose of spreading income or expense over multiple fiscal years
- **"Deferred Outflows" are increases in NPL that have not been recognized through expense; "Deferred Inflows" are decreases in NPL that have not been recognized through expense**
  - For example, if average expected remaining service lives is 7 years, 1/7th of demographic actuarial gains/losses are recognized in pension expense for the year; the remaining 6/7th is recorded as a deferred inflow/outflow
  - Similarly, 1/5th of investment gains/losses in the fiscal year are recognized in pension expense for the year and the remaining 4/5th is recorded as a deferred inflow/outflow

Pension Expense
Deferred Outflows and Inflows *(continued)*

- **Schedule of deferred outflows and inflows as of FYE 2021**

Employer	Year Established	Original Balance	Original Amortization Period	Amortization Amount During 2021	Outstanding Balance at June 30, 2021
Outflows					
Demographics	2015	$2,209,258	7 years	$315,610	$0
Assumptions	2015	171,324,647	7 years	24,474,947	0
Investments	2019	59,163,355	5 years	11,832,671	23,665,342
Investments	2020	114,538,151	5 years	22,907,630	68,722,890
Assumptions	2020	51,813,028	7 years	7,401,861	37,009,305
Demographics	2021	8,366,320	8 years	1,045,790	7,320,530
Total Outflows				**$67,978,509**	**$136,718,067**
Inflows					
Demographics	2016	8,092,800	7 years	1,156,114	1,156,116
Demographics	2017	10,748,944	7 years	1,535,563	3,071,129
Investments	2017	103,235,815	5 years	20,647,163	0
Investments	2018	30,002,998	5 years	6,000,600	6,000,598
Demographics	2018	27,939,071	7 years	3,991,296	11,973,887
Demographics	2019	23,494,914	7 years	3,356,416	13,425,666
Demographics	2020	20,732,097	7 years	2,961,728	14,808,640
Investments	2021	493,904,813	5 years	98,780,963	395,123,850
Total Inflows				**$138,429,843**	**$445,559,886**

Collective Pension Expense ($ in millions)

	Year ending June 30, 2020	Year ending June 30, 2021
Service cost	$81	$87
Interest on the total pension liability	307	301
Projected earning on plan investments	(201)	(190)
Contributions – member	(86)	(91)
Contributions – purchased service credit and other	(2)	(3)
Administrative expense	2	3
Current year of recognition of:		
• Change of assumptions	32	32
• Difference between expected and actual experience	(11)	(12)
• Difference between projected and actual earning on pension plan investments	39	(91)
• Change of benefit terms	0	0
Total pension expense	$161	$37

Note: numbers may not add due to rounding

Pension Expense – Calculation Methods

- **Pension Expense =**
  - +/- Change in Net Pension Liability
  - + Employer Contributions
  - + Amounts recognized in current year for bases formed previously
  - - Outstanding balance at end of year for new inflows and outflows.
- **Pension Expense =**
  - +/- Change in Net Pension Liability
  - + Employer Contributions
  - +/- Net deferred inflow and outflow balances from end of current fiscal year to end of prior fiscal year.
- **Pension Expense =**
  - + Service Cost
  - + Interest on TPL
  - - Employee Contributions
  - + Administrative Expenses
  - - Expected Return on NPL
  - +/- Net deferred inflow and outflow balances from end of current fiscal year to end of prior fiscal year.

Cost-Sharing Plans

- **Recognize and disclose a "proportionate share" of collective Net Pension Liability, pension expense, and deferred inflows and outflows**
- **Determining an employer's "proportionate share"**
  - Basis should be consistent with the way required contributions are determined
  - If different contribution rates are assessed for different groups, the allocation should reflect these relationships
- **Employer's proportion should be established as of the measurement date:**
  - Unless employer's proportion is actuarially determined (in which case use date of the valuation)
- **For TFFR, covered payroll is used as it is most representative of the employer's projected long-term contribution effort**

Cost-Sharing Allocation

Ten Largest Participating Employers	Covered Payroll	Proportionate Share Allocation
1. Bismarck Public Schools	$80,745,044	10.476850%
2. Fargo Public Schools	78,514,245	10.187399%
3. West Fargo School	71,788,903	9.314771%
4. Grand Forks School	51,251,415	6.649986%
5. Minot School	49,716,549	6.450834%
6. Williston School	25,750,488	3.341184%
7. Dickinson School	25,085,329	3.254878%
8. Mandan Public Schools	23,309,480	3.024457%
9. Jamestown School	14,202,120	1.842757%
10. Mckenzie County School	11,703,642	1.518574%
11-211. Remaining 201 employers	338,632,385	43.938311%
Total	**$770,699,600**	**100.000000%**

- **For example, Bismarck Public Schools is allocated NPL of $110,389,891 and pension expense of $3,824,387**
  - 10.47685% of the collection NPL and pension expense
  - In addition, must expense an adjustment related to the change in proportionate share from the prior year

Disclosure Information

- **Includes both Notes and Required Supplementary Information**
  - Description of the plan and assumptions
  - Policy for determining contributions
  - NPL sensitivity analysis of a one percentage point increase and decrease in the discount rate
  - Changes in the NPL for the past 10 years
  - Development of long-term earnings assumption (e.g., building block), and if applicable, the “blended” discount rate
  - Annual rates of investment return for past 10 years (plan only)
  - Actuarially determined contribution (“ADC”) compared to amount actually contributed for past 10 years.
  - A description of the basis for determining the proportionate share of NPL (and pension expense)

Questions

NORTH DAKOTA RETIREMENT AND INVESTMENT OFFICE -
NORTH DAKOTA TEACHERS' FUND FOR RETIREMENT
Bismarck, North Dakota

SCHEDULES OF EMPLOYER ALLOCATIONS AND PENSION AMOUNTS BY EMPLOYER

June 30, 2021

PAGE

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INDEPENDENT AUDITORS' REPORT

Governor Doug Burgum
The Legislative Assembly
David Hunter, Executive Director/CIO
State Investment Board
Teacher's Fund for Retirement Board
North Dakota Retirement and Investment Office

Report on Schedules

We have audited the accompanying schedule of employer allocations of the North Dakota Retirement and Investment Office - North Dakota Teachers' Fund for Retirement (TFFR), a department of the State of North Dakota, as of and for the year ended June 30, 2021, and the related notes.

We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense as of and for the year ended June 30, 2021 (specified column totals), included in the accompanying schedule of pension amounts by employer of TFFR, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer

allocations and specified column totals included in the schedule of pension amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities for TFFR as of and for the year ended June 30, 2021, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the North Dakota Retirement and Investment Office (RIO), which includes TFFR, as of and for the year ended June 30, 2021, and our report thereon, dated November 2, 2021, expressed an unmodified opinion on those statements.

Restriction on Use

Our report is intended solely for the information and use of the management of RIO, Board of Trustees, TFFR employers and their auditors as of and for the year ended June 30, 2021 and is not intended to be and should not be used by anyone other than these specified parties.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Audit Standards*, we have also issued our report dated November 2, 2021, on our consideration of RIO's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the RIO's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering RIO's internal control over financial reporting and compliance.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
November 2, 2021

Employer Name	Covered Payroll	Employer's Proportionate Share Allocation
Alexander School	$ 1,532,485	0.19884342%
Anamoose School	706,708	0.09169696%
Apple Creek Elem School	354,606	0.04601094%
Ashley School	1,068,982	0.13870276%
Bakker Elem School	55,075	0.00714612%
Barnes County North	1,722,251	0.22346593%
Beach School	2,159,780	0.28023624%
Belcourt School	9,236,682	1.19848019%
Belfield Public School	1,577,009	0.20462040%
Beulah School	3,959,829	0.51379667%
Billings Co. School Dist.	984,554	0.12774806%
Bismarck Public Schools	80,745,044	10.47685043%
Bismarck State College	-	0.00000000%
Blessed John Paul II Catholic Sch Network	-	0.00000000%
Bottineau School	4,030,561	0.52297432%
Bowbells School	682,902	0.08860802%
Bowman School	3,418,532	0.44356212%
Burke Central School	936,948	0.12157112%
Burleigh County Spec. Ed.	120,603	0.01564848%
Carrington School	2,985,315	0.38735126%
Cavalier School	2,512,417	0.32599173%
Center Stanton School	1,759,542	0.22830447%
Central Cass School	4,522,150	0.58675909%
Central Regional Education Association	796,299	0.10332162%
Central Elementary School	-	0.00000000%
Central Valley School	1,425,288	0.18493426%
Dakota Prairie School	2,312,424	0.30004219%
Devils Lake School	11,725,954	1.52146882%
Dickinson School	25,085,329	3.25487764%
Divide School	2,943,487	0.38192398%
Drake School	510,667	0.06626015%
Drayton School	1,611,454	0.20908981%
Dunseith School	3,767,459	0.48883622%
E Central Ctr Exc Childn	604,224	0.07839937%
Earl Elem. School	27,200	0.00352927%
Edgeley School	1,383,988	0.17957560%
Edmore School	669,351	0.08684976%
Eight Mile School	1,983,342	0.25734306%
Elgin-New Leipzig School	1,200,323	0.15574455%
Ellendale School	1,830,944	0.23756904%

Employer Name	Covered Payroll	Employer's Proportionate Share Allocation
Emerado Elementary School	754,570	0.09790718%
Enderlin Area School District	2,175,764	0.28231026%
Fairmount School	811,349	0.10527434%
Fargo Public Schools	78,514,245	10.18739920%
Fessenden-Bowdon School	1,168,957	0.15167475%
Finley-Sharon School	1,166,572	0.15136539%
Flasher School	1,436,357	0.18637055%
Fordville Lankin School	620,035	0.08045092%
Fort Ransom Elem School	172,434	0.02237368%
Fort Totten School	1,833,731	0.23793068%
Fort Yates School	1,050,265	0.13627427%
Gackle-Streeter Pub Sch	885,654	0.11491561%
Garrison School	2,546,830	0.33045686%
Glen Ullin School	1,221,554	0.15849935%
Glenburn School	1,945,280	0.25240442%
Goodrich School	181,557	0.02355748%
Grafton School	4,678,252	0.60701365%
Grand Forks School	51,251,415	6.64998599%
Great North West Cooperative	136,985	0.01777405%
Grenora School	1,315,558	0.17069661%
Griggs County Central Sch	1,659,611	0.21533823%
Gst Educational Services	2,008,201	0.26056863%
Halliday School	311,263	0.04038710%
Hankinson School	1,632,659	0.21184118%
Harvey School	2,365,301	0.30690306%
Hatton Eielson Psd	1,323,461	0.17172208%
Hazelton - Moffit School	922,982	0.11975899%
Hazen School	3,016,976	0.39145943%
Hebron School	1,209,359	0.15691709%
Hettinger School	1,495,942	0.19410186%
Hillsboro School	2,868,782	0.37223090%
Hope-Page Public School District	1,722,840	0.22354241%
Horse Creek Elem. School	46,200	0.00599455%
James River Multidistrict Spec Ed Unit	1,387,239	0.17999737%
Jamestown School	14,202,120	1.84275695%
Kenmare School	2,010,036	0.26080665%
Kensal School	300,107	0.03893956%
Kidder County School District	2,129,166	0.27626408%
Killdeer School	4,041,570	0.52440276%
Kindred School	4,182,999	0.54275354%

Employer Name	Covered Payroll	Employer's Proportionate Share Allocation
Kulm School	1,095,475	0.14214039%
Lake Region Spec Ed	2,093,494	0.27163553%
Lakota School	1,188,020	0.15414822%
Lamoure School	1,574,528	0.20429854%
Langdon Area School	2,599,443	0.33728349%
Larimore School	2,230,671	0.28943455%
Leeds School	1,055,197	0.13691420%
Lewis And Clark School	2,667,665	0.34613549%
Lidgerwood School	1,184,734	0.15372195%
Linton School	1,667,893	0.21641281%
Lisbon School	3,922,895	0.50900441%
Litchville-Marion School	897,386	0.11643783%
Little Heart Elem. School	177,457	0.02302545%
Logan County	-	0.00000000%
Lone Tree Elem. School	291,191	0.03778266%
Lonetree Spec Ed Unit	135,672	0.01760371%
Maddock School	894,430	0.11605434%
Mandan Public Schools	23,309,480	3.02445724%
Mandaree School	1,762,416	0.22867741%
Manning Elem School	120,109	0.01558441%
Manvel Elem. School	1,043,680	0.13541983%
Maple Valley School	1,754,950	0.22770871%
Mapleton Elem. School	1,105,888	0.14349148%
Marmarth Elem. School	139,341	0.01807985%
Max School	1,245,808	0.16164632%
May-Port C-G School	2,725,072	0.35358422%
Mcclusky School	759,379	0.09853108%
Mckenzie County	49,006	0.00635862%
Mckenzie County School	11,703,642	1.51857383%
Medina School	1,105,983	0.14350373%
Menoken Elem School	255,826	0.03319400%
Midkota	1,285,581	0.16680697%
Midway School	1,338,233	0.17363867%
Milnor School	1,597,201	0.20724045%
Minnewaukan School	2,118,785	0.27491710%
Minot School	49,716,549	6.45083366%
Minto School	1,621,523	0.21039619%
Mohall Lansford Sherwood	2,122,701	0.27542521%
Montpelier School	831,746	0.10792085%
Morton County	-	0.00000000%

Employer Name	Covered Payroll	Employer's Proportionate Share Allocation
Mott-Regent School	1,476,467	0.19157491%
Mt Pleasant School	2,066,539	0.26813811%
Munich School	1,073,937	0.13934575%
N Central Area Career And Tech Center	-	0.00000000%
Napoleon School	1,617,439	0.20986639%
Naughton Rural School	151,757	0.01969078%
Nd Center For Distance Education	1,996,655	0.25907040%
Nd Dept Of Public Instruction	239,615	0.03109063%
Nd School For Blind	686,338	0.08905389%
Nd School For Deaf	948,981	0.12313235%
Nd United	107,705	0.01397492%
Nd Youth Correctional Cnt	518,173	0.06723413%
Nedrose School	3,515,406	0.45613175%
Nelson County	10,547	0.00136846%
Nesson School	2,327,885	0.30204823%
New England School	1,537,221	0.19945789%
New Rockford Sheyenne School	1,855,873	0.24080368%
New Salem-Almont	2,173,236	0.28198224%
New Town School	6,588,890	0.85492330%
Newburg United District	807,144	0.10472879%
North Border School	2,699,594	0.35027840%
North Sargent School	1,664,812	0.21601314%
North Star	1,725,389	0.22387315%
North Valley Area Career	804,469	0.10438161%
Northern Cass School Dist	3,566,907	0.46281423%
Northern Plains Spec Ed	449,841	0.05836784%
Northwood School	2,076,595	0.26944292%
Oakes School	2,502,217	0.32466831%
Oberon Elem School	360,717	0.04680383%
Oliver - Mercer Spec Ed	865,791	0.11233831%
Page School	-	0.00000000%
Park River Area School District	2,227,868	0.28907084%
Parshall School	1,873,180	0.24304926%
Peace Garden Spec Ed	705,918	0.09159449%
Pembina Spec Ed Coop	132,365	0.01717462%
Pingree - Buchanan School	932,279	0.12096532%
Pleasant Valley Elem	-	0.00000000%
Powers Lake School	1,434,722	0.18615840%
Richardton-Taylor	1,945,640	0.25245119%
Richland School	1,687,314	0.21893271%

Employer Name	Covered Payroll	Employer's Proportionate Share Allocation
Robinson School	-	0.00000000%
Rolette County	-	0.00000000%
Rolette School	1,328,338	0.17235487%
Roosevelt School	389,902	0.05059066%
Roughrider Area Career And Tech Center	236,512	0.03068795%
Roughrider Service Program	200,712	0.02604283%
Rugby School	4,005,512	0.51972415%
Rural Cass Spec Ed	1,657,683	0.21508813%
Sargent Central School	1,809,518	0.23478896%
Sawyer School	642,380	0.08335026%
Scranton School	1,245,781	0.16164293%
Se Region Career And Tech	1,850,804	0.24014597%
Selfridge School	923,473	0.11982263%
Sheyenne Valley Area Voc	992,653	0.12879901%
Sheyenne Valley Spec Ed	1,900,670	0.24661620%
Slope County	27,629	0.00358496%
Solen - Cannonball School	1,660,427	0.21544414%
Souris Valley Spec Ed	1,252,418	0.16250404%
South Cent. Prairie Sp Ed	372,553	0.04833961%
South East Education Cooperative	712,038	0.09238852%
South Heart School	2,446,169	0.31739587%
South Prairie School District	2,956,719	0.38364097%
South Valley Spec Ed	478,609	0.06210062%
Southwest Special Education Unit	70,000	0.00908266%
St. John'S School	3,630,280	0.47103699%
St. Thomas School	568,133	0.07371653%
Stanley School	3,779,712	0.49042606%
Starkweather School	655,273	0.08502312%
Sterling School	173,411	0.02250046%
Strasburg School District	903,269	0.11720119%
Surrey School	2,704,926	0.35097025%
Sweet Briar Elem School	123,860	0.01607112%
Tgu School District	2,674,576	0.34703227%
Thompson School	2,695,195	0.34970763%
Tioga School	3,458,821	0.44878979%
Turtle Lake-Mercer School	1,429,053	0.18542289%
Twin Buttes Elem. School	479,900	0.06226814%
Underwood School	1,579,199	0.20490455%
United School	3,541,189	0.45947725%
Upper Valley Spec Ed	2,664,861	0.34577166%

Employer Name	Covered Payroll	Employer's Proportionate Share Allocation
Valley - Edinburg School	1,565,472	0.20312356%
Valley City School	6,534,110	0.84781538%
Velva School	3,072,542	0.39866921%
Wahpeton School	7,552,249	0.97992119%
Ward County	31,450	0.00408073%
Warwick School	1,851,906	0.24028894%
Washburn School	2,077,978	0.26962236%
West Fargo School	71,788,903	9.31477104%
West River Student Services	552,825	0.07173026%
Westhope School	1,181,268	0.15327211%
White Shield School	1,671,370	0.21686402%
Williams Co School Dist #8	3,243,203	0.42081291%
Williston School	25,750,488	3.34118356%
Wilmac Special Education	5,084,610	0.65973954%
Wilton School	1,585,187	0.20568159%
Wing School	718,516	0.09322911%
Wishek School	1,295,045	0.16803494%
Wolford School	-	0.00000000%
Wyndmere School	1,455,242	0.18882097%
Yellowstone Elem. School	586,400	0.07608671%
Zeeland School	480,314	0.06232177%
Grand Totals:	**$770,699,600**	**100%**

Note: Columns may not foot due to rounding.

North Dakota Retirement and Investment Office - North Dakota Teachers' Fund for Retirement

Schedule of Pension Amounts by Employer

As of and for the year ended June 30, 2021

		Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		
Employer Name	Net Pension Liability for the year ended June 30, 2021	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Alexander School	$ 2,095,124	$ 14,556	$ 73,591	$ 273,565	$ 361,712	$ 88,357	$ 613,902	$ -	$ 121,398	$ 823,657	$ 72,584	$ 97,206	$ 169,790
Anamoose School	966,170	6,713	33,936	11,915	52,564	40,746	283,102	-	184,621	508,469	33,472	(29,516)	3,956
Apple Creek Elem School	484,797	3,368	17,028	44,878	65,274	20,445	142,052	-	59,176	221,673	16,795	(21,520)	(4,725)
Ashley School	1,461,449	10,154	51,333	45,118	106,605	61,633	428,226	-	76,411	566,270	50,631	(22,150)	28,481
Bakker Elem School	75,295	523	2,645	15,654	18,822	3,175	22,063	-	497	25,735	2,609	2,546	5,155
Barnes County North	2,354,561	16,359	82,703	45,645	144,707	99,298	689,920	-	226,550	1,015,768	81,572	(112,485)	(30,913)
Beach School	2,952,724	20,515	103,713	9,999	134,227	124,524	865,191	-	418,914	1,408,629	102,295	(129,503)	(27,208)
Belcourt School	12,627,850	87,735	443,549	247,974	779,258	532,550	3,700,142	-	1,021,740	5,254,432	437,484	(245,985)	191,499
Belfield Public School	2,155,994	14,979	75,729	90,043	180,751	90,924	631,737	-	336,313	1,058,974	74,693	(28,689)	46,004
Beulah School	5,413,646	37,613	190,153	198,879	426,645	228,308	1,586,276	-	294,535	2,109,119	187,552	(73,261)	114,291
Billings Co. School Dist.	1,346,024	9,352	47,279	169,362	225,993	56,765	394,405	-	92,053	543,223	46,632	5,859	52,491
Bismarck Public Schools	110,389,891	766,961	3,877,410	633,992	5,278,363	4,655,434	32,345,832	-	2,746,232	39,747,498	3,824,387	(332,345)	3,492,042
Bismarck State College	-	-	-	-	-	-	-	-	-	-	-	(8,928)	(8,928)
Blessed John Paul II Catholic Sch Netw	-	-	-	-	-	-	-	-	8,367	8,367	-	(8,785)	(8,785)
Bottineau School	5,510,347	38,284	193,549	176,861	408,694	232,386	1,614,611	-	543,627	2,390,624	190,902	(149,016)	41,886
Bowbells School	933,623	6,487	32,793	67,411	106,691	39,373	273,565	-	52,862	365,800	32,345	1,721	34,066
Bowman School	4,673,616	32,471	164,159	256,204	452,834	197,099	1,369,437	-	86,711	1,653,247	161,914	1,508	163,422
Burke Central School	1,280,941	8,900	44,993	187,593	241,486	54,021	375,334	-	363,793	793,148	44,377	(44,127)	250
Burleigh County Spec. Ed.	164,881	1,146	5,791	20,229	27,166	6,953	48,313	-	13,204	68,470	5,712	6,941	12,653
Carrington School	4,081,347	28,356	143,356	26,205	197,917	172,121	1,195,894	-	541,522	1,909,537	141,396	(127,292)	14,104
Cavalier School	3,434,829	23,864	120,647	125,910	270,421	144,856	1,006,455	-	197,023	1,348,334	118,997	(28,029)	90,968
Center Stanton School	2,405,542	16,713	84,494	109,794	211,001	101,448	704,859	-	80,329	886,636	83,338	1,542	84,880
Central Cass School	6,182,418	42,954	217,155	540,031	800,140	260,729	1,811,538	-	174,346	2,246,613	214,186	37,798	251,984
Central Regional Education Associatio	1,088,654	7,564	38,239	1,003,110	1,048,913	45,911	318,991	-	2,421	367,323	37,716	200,276	237,992
Central Elementary School	-	-	-	1,557	1,557	-	-	-	72,841	72,841	-	(19,182)	(19,182)
Central Valley School	1,948,570	13,538	68,443	12,986	94,967	82,176	570,959	-	83,875	737,010	67,507	(41,386)	26,121
Dakota Prairie School	3,161,410	21,965	111,044	267,065	400,074	133,325	926,339	-	173,831	1,233,495	109,525	32,602	142,127
Devils Lake School	16,031,037	111,380	563,085	405,842	1,080,307	676,071	4,697,325	-	894,221	6,267,617	555,385	(316,531)	238,854
Dickinson School	34,295,191	238,274	1,204,608	3,866,349	5,309,231	1,446,319	10,048,986	-	439,525	11,934,830	1,188,135	1,154,389	2,342,524
Divide School	4,024,162	27,959	141,347	335,925	505,231	169,710	1,179,138	-	168,199	1,517,047	139,415	23,354	162,769
Drake School	698,154	4,851	24,522	12,350	41,723	29,443	204,569	-	76,438	310,450	24,187	(43,373)	(19,186)
Drayton School	2,203,086	15,306	77,383	243,341	336,030	92,910	645,536	-	112,177	850,623	76,324	40,468	116,792
Dunseith School	5,150,649	35,785	180,915	314,928	531,628	217,217	1,509,214	-	48,714	1,775,145	178,441	124,391	302,832
E Central Ctr Exc Childn	826,059	5,739	29,015	-	34,754	34,837	242,047	-	434,708	711,592	28,618	(93,917)	(65,299)
Earl Elem. School	37,186	258	1,306	1,094	2,658	1,568	10,896	-	11,810	24,274	1,288	(3,117)	(1,829)
Edgeley School	1,892,108	13,146	66,460	112,518	192,124	79,795	554,415	-	257,160	891,370	65,551	(36,976)	28,575
Edmore School	915,097	6,358	32,142	41,833	80,333	38,592	268,137	-	319,762	626,491	31,703	(41,037)	(9,334)
Eight Mile School	2,711,509	18,839	95,241	377,459	491,539	114,352	794,511	-	124,506	1,033,369	93,938	88,347	182,285
Elgin-New Leipzig School	1,641,011	11,401	57,640	33,092	102,133	69,206	480,840	-	196,803	746,849	56,852	(19,736)	37,116
Ellendale School	2,503,159	17,391	87,923	58,675	163,989	105,565	733,462	-	243,566	1,082,593	86,720	(96,960)	(10,240)

The accompanying notes are an integral part of the Schedule of Pension Amounts by Employer

		Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
Employer Name	Net Pension Liability for the year ended June 30, 2021	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Emerado Elementary School	1,031,604	7,167	36,235	102,959	146,361	43,505	302,275	-	19,763	365,543	35,739	12,069	47,808
Enderlin Area School District	2,974,577	20,667	104,481	22,937	148,085	125,446	871,594	-	212,133	1,209,173	103,052	(51,098)	51,954
Fairmount School	1,109,229	7,707	38,961	12,969	59,637	46,779	325,020	-	520,090	891,889	38,429	(102,617)	(64,188)
Fargo Public Schools	107,340,073	745,772	3,770,286	889,705	5,405,763	4,526,815	31,452,191	-	4,459,862	40,438,868	3,718,728	(1,207,704)	2,511,024
Fessenden-Bowdon School	1,598,129	11,103	56,134	54,241	121,478	67,397	468,275	-	146,888	682,560	55,366	(3,338)	52,028
Finley-Sharon School	1,594,869	11,081	56,019	51,090	118,190	67,260	467,320	-	111,474	646,054	55,253	(60,665)	(5,412)
Flasher School	1,963,703	13,643	68,974	187,281	269,898	82,815	575,393	-	7,037	665,245	68,031	11,880	79,911
Fordville Lankin School	847,675	5,889	29,774	32,747	68,410	35,749	248,381	-	133,763	417,893	29,367	(23,048)	6,319
Fort Ransom Elem School	235,741	1,638	8,280	547	10,465	9,942	69,076	-	19,663	98,681	8,167	(6,757)	1,410
Fort Totten School	2,506,969	17,418	88,056	337,774	443,248	105,726	734,578	-	186,777	1,027,081	86,852	(41,164)	45,688
Fort Yates School	1,435,861	9,976	50,434	91,497	151,907	60,554	420,728	-	492,451	973,733	49,744	(74,655)	(24,911)
Gackle-Streeter Pub Sch	1,210,814	8,412	42,529	10,133	61,074	51,063	354,786	-	38,225	444,074	41,948	(14,604)	27,344
Garrison School	3,481,876	24,191	122,300	11,687	158,178	146,840	1,020,240	-	176,722	1,343,802	120,627	(38,677)	81,950
Glen Ullin School	1,670,037	11,603	58,660	80,709	150,972	70,430	489,345	-	173,982	733,757	57,857	(23,416)	34,441
Glenburn School	2,659,473	18,477	93,413	154,595	266,485	112,157	779,264	-	323,666	1,215,087	92,136	(12,834)	79,302
Goodrich School	248,215	1,725	8,718	9,110	19,553	10,468	72,730	-	263,834	347,032	8,599	(42,690)	(34,091)
Grafton School	6,395,832	44,437	224,652	121,148	390,237	269,729	1,874,071	-	591,078	2,734,878	221,579	(149,988)	71,591
Grand Forks School	70,067,931	486,814	2,461,114	128,172	3,076,100	2,954,950	20,530,915	-	3,649,091	27,134,956	2,427,458	(976,518)	1,450,940
Great North West Cooperative	187,277	1,301	6,578	116,169	124,048	7,898	54,875	-	201,505	264,278	6,488	(6,685)	(197)
Grenora School	1,798,554	12,496	63,174	124,833	200,503	75,850	527,002	-	191,212	794,064	62,310	3,369	65,679
Griggs County Central Sch	2,268,923	15,764	79,695	4,241	99,700	95,686	664,827	-	391,861	1,152,374	78,605	(131,055)	(52,450)
Gst Educational Services	2,745,495	19,075	96,435	225,221	340,731	115,785	804,470	-	134,617	1,054,872	95,116	23,062	118,178
Halliday School	425,541	2,957	14,947	12,033	29,937	17,946	124,690	-	147,209	289,845	14,743	(55,072)	(40,329)
Hankinson School	2,232,076	15,508	78,401	30,809	124,718	94,133	654,030	-	167,295	915,458	77,329	(95,065)	(17,736)
Harvey School	3,233,700	22,467	113,583	18,623	154,673	136,374	947,521	-	381,008	1,464,903	112,029	(96,208)	15,821
Hatton Eielson Psd	1,809,359	12,571	63,553	85,432	161,556	76,305	530,168	-	80,590	687,063	62,684	(17,345)	45,339
Hazelton - Moffit School	1,261,847	8,767	44,322	97,009	150,098	53,215	369,739	-	153,230	576,184	43,716	(21,176)	22,540
Hazen School	4,124,633	28,657	144,876	67,959	241,492	173,947	1,208,577	-	446,230	1,828,754	142,895	(98,032)	44,863
Hebron School	1,653,365	11,487	58,074	27,471	97,032	69,727	484,460	-	209,194	763,381	57,280	(55,205)	2,075
Hettinger School	2,045,165	14,209	71,836	16,160	102,205	86,250	599,263	-	204,057	889,570	70,853	(120,259)	(49,406)
Hillsboro School	3,922,031	27,249	137,760	149,259	314,268	165,402	1,149,212	-	215,501	1,530,115	135,876	7,471	143,347
Hope-Page Public School District	2,355,366	16,364	82,731	1,531,626	1,630,721	99,332	690,156	-	36,012	825,500	81,600	218,791	300,391
Horse Creek Elem. School	63,162	439	2,219	24,056	26,714	2,664	18,507	-	25,173	46,344	2,188	(25)	2,163
James River Multidistrict Spec Ed Unit	1,896,552	13,177	66,616	55,466	135,259	79,983	555,717	-	311,636	947,336	65,705	(31,825)	33,880
Jamestown School	19,416,306	134,900	681,992	-	816,892	818,837	5,689,258	-	1,589,074	8,097,169	672,665	(573,305)	99,360
Kenmare School	2,748,003	19,092	96,523	133,962	249,577	115,891	805,205	-	146,164	1,067,260	95,203	(55,750)	39,453
Kensal School	410,289	2,851	14,411	49,637	66,899	17,303	120,221	-	161,143	298,667	14,214	(46,275)	(32,061)
Kidder County School District	2,910,871	20,224	102,243	123,945	246,412	122,759	852,927	-	630,692	1,606,378	100,845	(162,116)	(61,271)
Killdeer School	5,525,398	38,389	194,078	1,084,804	1,317,271	233,021	1,619,021	-	19,536	1,871,578	191,424	233,328	424,752
Kindred School	5,718,751	39,732	200,869	577,183	817,784	241,175	1,675,677	-	27,773	1,944,625	198,122	73,049	271,171

North Dakota Retirement and Investment Office - North Dakota Teachers' Fund for Retirement

Schedule of Pension Amounts by Employer

As of and for the year ended June 30, 2021

		Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
Employer Name	Net Pension Liability for the year ended June 30, 2021	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Kulm School	1,497,670	10,405	52,605	29,053	92,063	63,161	438,839	-	159,614	661,614	51,886	(60,297)	(8,411)
Lake Region Spec Ed	2,862,102	19,885	100,530	226,563	346,978	120,702	838,637	-	211,413	1,170,752	99,156	(24,462)	74,694
Lakota School	1,624,191	11,284	57,049	65,616	133,949	68,496	475,911	-	322,718	867,125	56,269	(74,003)	(17,734)
Lamoure School	2,152,602	14,956	75,609	606	91,171	90,781	630,744	-	250,479	972,004	74,576	(67,615)	6,961
Langdon Area School	3,553,805	24,691	124,826	429,123	578,640	149,873	1,041,316	-	453,419	1,644,608	123,119	7,577	130,696
Larimore School	3,049,643	21,188	107,118	61,356	189,662	128,612	893,589	-	356,892	1,379,093	105,653	(117,913)	(12,260)
Leeds School	1,442,604	10,023	50,671	-	60,694	60,838	422,704	-	258,260	741,802	49,978	(63,046)	(13,068)
Lewis And Clark School	3,647,075	25,339	128,102	61,612	215,053	153,807	1,068,646	-	498,184	1,720,637	126,351	(112,023)	14,328
Lidgerwood School	1,619,699	11,253	56,891	14,097	82,241	68,307	474,595	-	218,075	760,977	56,113	(58,643)	(2,530)
Linton School	2,280,245	15,843	80,093	6,330	102,266	96,164	668,145	-	308,541	1,072,850	78,998	(100,352)	(21,354)
Lisbon School	5,363,152	37,262	188,379	332,980	558,621	226,178	1,571,481	-	395,785	2,193,444	185,803	(82,444)	103,359
Litchville-Marion School	1,226,853	8,524	43,093	30,900	82,517	51,740	359,486	-	123,867	535,093	42,504	(39,813)	2,691
Little Heart Elem. School	242,609	1,686	8,522	56,612	66,820	10,231	71,088	-	1,695	83,014	8,405	12,311	20,716
Logan County	-	-	-	-	-	-	-	-	6,757	6,757	-	(1,265)	(1,265)
Lone Tree Elem. School	398,099	2,766	13,983	40,456	57,205	16,789	116,649	-	19,817	153,255	13,792	7,299	21,091
Lonetree Spec Ed Unit	185,482	1,289	6,515	109,512	117,316	7,822	54,349	-	224,645	286,816	6,426	(10,293)	(3,867)
Maddock School	1,222,813	8,496	42,951	5,367	56,814	51,569	358,302	-	315,813	725,684	42,364	(74,316)	(31,952)
Mandan Public Schools	31,867,354	221,406	1,119,331	554,233	1,894,970	1,343,931	9,337,595	-	91,874	10,773,400	1,104,024	349,817	1,453,841
Mandaree School	2,409,472	16,740	84,632	269,998	371,370	101,614	706,010	-	367,003	1,174,627	83,475	(78,009)	5,466
Manning Elem School	164,206	1,141	5,768	102,856	109,765	6,925	48,115	-	67,681	122,721	5,689	5,730	11,419
Manvel Elem. School	1,426,858	9,913	50,118	132,648	192,679	60,174	418,090	-	56,771	535,035	49,433	16,673	66,106
Maple Valley School	2,399,265	16,669	84,273	12,477	113,419	101,183	703,019	-	194,912	999,114	83,121	(66,005)	17,116
Mapleton Elem. School	1,511,906	10,504	53,105	313,748	377,357	63,761	443,010	-	10,094	516,865	52,379	67,166	119,545
Marmarth Elem. School	190,499	1,324	6,691	49,598	57,613	8,034	55,819	-	71,480	135,333	6,600	(14,723)	(8,123)
Max School	1,703,195	11,833	59,824	92,342	163,999	71,828	499,061	-	204,422	775,311	59,006	(41,022)	17,984
May-Port C-G School	3,725,559	25,884	130,859	-	156,743	157,117	1,091,643	-	628,620	1,877,380	129,070	(116,899)	12,171
Mcclusky School	1,038,178	7,213	36,466	232,993	276,672	43,783	304,201	-	222,063	570,047	35,967	(47,094)	(11,127)
Mckenzie County	66,998	465	2,353	2,887	5,705	2,825	19,631	-	6,122	28,578	2,321	(4,303)	(1,982)
Mckenzie County School	16,000,534	111,168	562,014	4,491,271	5,164,453	674,785	4,688,387	-	-	5,363,172	554,328	1,344,989	1,899,317
Medina School	1,512,035	10,505	53,110	44,031	107,646	63,767	443,048	-	172,796	679,611	52,383	(26,140)	26,243
Menoken Elem School	349,750	2,430	12,285	74,853	89,568	14,750	102,482	-	-	117,232	12,117	23,093	35,210
Midkota	1,757,570	12,211	61,734	197,421	271,366	74,121	514,994	-	58,479	647,594	60,890	(5,928)	54,962
Midway School	1,829,553	12,711	64,262	72,046	149,019	77,157	536,085	-	352,527	965,769	63,384	(102,244)	(38,860)
Milnor School	2,183,600	15,171	76,698	131,856	223,725	92,088	639,826	-	185,526	917,440	75,649	(56,173)	19,476
Minnewaukan School	2,896,679	20,125	101,745	464,489	586,359	122,161	848,769	-	197,633	1,168,563	100,354	(771)	99,583
Minot School	67,969,551	472,235	2,387,409	1,580,840	4,440,484	2,866,456	19,916,060	-	2,649,198	25,431,714	2,354,761	(816,882)	1,537,879
Minto School	2,216,851	15,402	77,866	388,414	481,682	93,490	649,569	-	219,239	962,298	76,801	52,641	129,442
Mohall Lansford Sherwood	2,902,032	20,163	101,933	-	122,096	122,386	850,337	-	489,372	1,462,095	100,539	(187,344)	(86,805)
Montpelier School	1,137,114	7,900	39,941	8,447	56,288	47,955	333,191	-	91,099	472,245	39,395	(10,923)	28,472
Morton County	-	-	-	104	104	-	-	-	32,549	32,549	-	(8,112)	(8,112)

The accompanying notes are an integral part of the Schedule of Pension Amounts by Employer

		Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
Employer Name	Net Pension Liability for the year ended June 30, 2021	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Mott-Regent School	2,018,539	14,024	70,901	141,475	226,400	85,127	591,461	-	440,109	1,116,697	69,931	(97,833)	(27,902)
Mt Pleasant School	2,825,251	19,629	99,236	326,341	445,206	119,148	827,839	-	74,165	1,021,152	97,879	36,902	134,781
Munich School	1,468,224	10,201	51,571	83,986	145,758	61,919	430,211	-	163,653	655,783	50,866	15,093	65,959
N Central Area Career And Tech Cent	-	-	-	-	-	-	-	-	121,281	121,281	-	(42,726)	(42,726)
Napoleon School	2,211,268	15,363	77,670	441,031	534,064	93,255	647,934	-	506,220	1,247,409	76,608	(58,501)	18,107
Naughton Rural School	207,473	1,441	7,287	79,728	88,456	8,750	60,793	-	1,495	71,038	7,188	14,968	22,156
Nd Center For Distance Education	2,729,709	18,965	95,880	793,256	908,101	115,119	799,844	-	93,084	1,008,047	94,569	183,978	278,547
Nd Dept Of Public Instruction	327,588	2,276	11,506	121,391	135,173	13,815	95,988	-	101,819	211,622	11,349	19,035	30,384
Nd School For Blind	938,321	6,519	32,958	26,405	65,882	39,571	274,942	-	192,391	506,904	32,508	(38,568)	(6,060)
Nd School For Deaf	1,297,391	9,014	45,570	17,105	71,689	54,714	380,154	-	180,793	615,661	44,947	(31,147)	13,800
Nd United	147,247	1,023	5,172	3,936	10,131	6,210	43,146	-	276,819	326,175	5,101	(67,895)	(62,794)
Nd Youth Correctional Cnt	708,416	4,922	24,883	35,337	65,142	29,876	207,576	-	1,328,526	1,565,978	24,543	(230,626)	(206,083)
Nedrose School	4,806,056	33,391	168,811	908,455	1,110,657	202,684	1,408,244	-	39,535	1,650,463	166,503	397,377	563,880
Nelson County	14,419	100	506	571	1,177	608	4,225	-	5,687	10,520	500	(917)	(417)
Nesson School	3,182,547	22,112	111,786	602,774	736,672	134,216	932,532	-	55,825	1,122,573	110,257	126,760	237,017
New England School	2,101,599	14,601	73,818	119,490	207,909	88,630	615,799	-	194,868	899,297	72,809	15,473	88,282
New Rockford Sheyenne School	2,537,241	17,628	89,120	67,702	174,450	107,002	743,448	-	270,550	1,121,000	87,901	(68,911)	18,990
New Salem-Almont	2,971,121	20,643	104,360	145,735	270,738	125,300	870,581	-	180,040	1,175,921	102,933	27,254	130,187
New Town School	9,007,945	62,585	316,401	1,492,688	1,871,674	379,889	2,639,458	-	118,732	3,138,079	312,074	378,102	690,176
Newburg United District	1,103,480	7,667	38,759	108,198	154,624	46,537	323,336	-	165,528	535,401	38,229	8,186	46,415
North Border School	3,690,727	25,642	129,636	51,491	206,769	155,648	1,081,436	-	752,861	1,989,945	127,863	(189,682)	(61,819)
North Sargent School	2,276,034	15,813	79,945	147,030	242,788	95,986	666,911	-	233,328	996,225	78,852	14,138	92,990
North Star	2,358,851	16,389	82,854	42,740	141,983	99,479	691,177	-	317,077	1,107,733	81,721	(42,144)	39,577
North Valley Area Career	1,099,822	7,641	38,631	253,094	299,366	46,382	322,264	-	29,397	398,043	38,103	9,994	48,097
Northern Cass School Dist	4,876,467	33,880	171,284	242,358	447,522	205,654	1,428,875	-	157,360	1,791,889	168,942	88,365	257,307
Northern Plains Spec Ed	614,996	4,273	21,602	202,524	228,399	25,936	180,203	-	26,729	232,868	21,306	44,625	65,931
Northwood School	2,839,000	19,725	99,719	318,008	437,452	119,728	831,868	-	8,201	959,797	98,355	83,265	181,620
Oakes School	3,420,885	23,767	120,157	495,988	639,912	144,268	1,002,369	-	252,688	1,399,325	118,514	(43)	118,471
Oberon Elem School	493,151	3,426	17,322	229,493	250,241	20,797	144,500	-	311,882	477,179	17,085	(50,806)	(33,721)
Oliver - Mercer Spec Ed	1,183,659	8,224	41,576	67,936	117,736	49,918	346,829	-	405,575	802,322	41,007	(62,365)	(21,358)
Page School	-	-	-	103,737	103,737	-	-	-	1,408,240	1,408,240	-	(202,979)	(202,979)
Park River Area School District	3,045,810	21,162	106,983	34,095	162,240	128,450	892,466	-	248,803	1,269,719	105,520	(96,804)	8,716
Parshall School	2,560,901	17,792	89,951	192,974	300,717	108,000	750,381	-	419,753	1,278,134	88,721	(70,380)	18,341
Peace Garden Spec Ed	965,090	6,705	33,898	178,126	218,729	40,700	282,785	-	87,551	411,036	33,435	29,498	62,933
Pembina Spec Ed Coop	180,961	1,257	6,356	23,113	30,726	7,632	53,024	-	20,399	81,055	6,269	(19,264)	(12,995)
Pingree - Buchanan School	1,274,558	8,855	44,768	130,639	184,262	53,751	373,464	-	132,737	559,952	44,156	(16,368)	27,788
Pleasant Valley Elem	-	-	-	-	-	-	-	-	-	-	-	(4,752)	(4,752)
Powers Lake School	1,961,468	13,628	68,896	187,468	269,992	82,720	574,738	-	27,950	685,408	67,954	44,128	112,082
Richardton-Taylor	2,659,965	18,481	93,430	124,302	236,213	112,178	779,408	-	314,335	1,205,921	92,153	(22,763)	69,390
Richland School	2,306,796	16,027	81,025	35,870	132,922	97,284	675,925	-	149,433	922,642	79,917	(69,114)	10,803

North Dakota Retirement and Investment Office - North Dakota Teachers' Fund for Retirement

Schedule of Pension Amounts by Employer

As of and for the year ended June 30, 2021

	Deferred Outflows of Resources					Deferred Inflows of Resources					Pension Expense		
Employer Name	Net Pension Liability for the year ended June 30, 2021	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Robinson School	-	-	-	-	-	-	-	-	10,092	10,092	-	(20,228)	(20,228)
Rolette County	-	-	-	-	-	-	-	-	-	-	-	(1,139)	(1,139)
Rolette School	1,816,026	12,617	63,787	30,906	107,310	76,587	532,122	-	162,213	770,922	62,915	(11,249)	51,666
Roosevelt School	533,051	3,704	18,723	72,339	94,766	22,480	156,192	-	189,066	367,738	18,467	(26,102)	(7,635)
Roughrider Area Career And Tech Ce	323,345	2,247	11,357	129,468	143,072	13,636	94,745	-	19,473	127,854	11,202	7,933	19,135
Roughrider Service Program	274,402	1,906	9,638	25,868	37,412	11,572	80,404	-	139,417	231,393	9,506	14,867	24,373
Rugby School	5,476,101	38,047	192,346	262,261	492,654	230,942	1,604,577	-	22,708	1,858,227	189,716	38,210	227,926
Rural Cass Spec Ed	2,266,288	15,746	79,603	542,449	637,798	95,575	664,055	-	75,773	835,403	78,514	81,066	159,580
Sargent Central School	2,473,866	17,188	86,894	136,709	240,791	104,330	724,879	-	71,810	901,019	85,706	13,107	98,813
Saw yer School	878,224	6,102	30,847	62,101	99,050	37,037	257,332	-	280,512	574,881	30,426	(94,991)	(64,565)
Scranton School	1,703,159	11,833	59,823	26,757	98,413	71,827	499,050	-	111,880	682,757	59,005	(20,009)	38,996
Se Region Career And Tech	2,530,311	17,580	88,876	206,561	313,017	106,710	741,418	-	774	848,902	87,661	41,807	129,468
Selfridge School	1,262,518	8,772	44,346	23,797	76,915	53,244	369,936	-	201,700	624,880	43,739	(28,810)	14,929
Sheyenne Valley Area Voc	1,357,098	9,429	47,668	176,894	233,991	57,232	397,649	-	75,146	530,027	47,016	24,467	71,483
Sheyenne Valley Spec Ed	2,598,485	18,054	91,271	629,189	738,514	109,585	761,394	-	300,621	1,171,600	90,023	(14,233)	75,790
Slope County	37,773	262	1,327	418	2,007	1,593	11,068	-	2,994	15,655	1,309	(604)	705
Solen - Cannonball School	2,270,039	15,772	79,734	298,999	394,505	95,734	665,154	-	471,128	1,232,016	78,644	(122,312)	(43,668)
Souris Valley Spec Ed	1,712,232	11,896	60,142	159,193	231,231	72,209	501,709	-	477,512	1,051,430	59,319	(154,611)	(95,292)
South Cent. Prairie Sp Ed	509,333	3,539	17,890	405,986	427,415	21,480	149,242	-	37,508	208,230	17,646	62,642	80,288
South East Education Cooperative	973,457	6,763	34,192	710,826	751,781	41,053	285,237	-	287,499	613,789	33,725	157,898	191,623
South Heart School	3,344,258	23,235	117,466	687,926	828,627	141,036	979,916	-	-	1,120,952	115,860	188,437	304,297
South Prairie School District	4,042,253	28,085	141,983	601,296	771,364	170,473	1,184,439	-	-	1,354,912	140,041	306,315	446,356
South Valley Spec Ed	654,326	4,546	22,983	78,062	105,591	27,595	191,727	-	201,700	421,022	22,669	(78,495)	(55,826)
Southw est Special Education Unit	95,700	665	3,361	3,529	7,555	4,036	28,041	-	13,699	45,776	3,315	(2,226)	1,089
St. John'S School	4,963,106	34,482	174,328	899,209	1,108,019	209,307	1,454,262	-	18,957	1,682,526	171,944	149,097	321,041
St. Thomas School	776,718	5,396	27,282	15,423	48,101	32,756	227,590	-	262,748	523,094	26,909	(63,111)	(36,202)
Stanley School	5,167,400	35,902	181,503	179,271	396,676	217,923	1,514,123	-	572,197	2,304,243	179,021	1,357	180,378
Starkw eather School	895,851	6,224	31,466	120,223	157,913	37,780	262,497	-	70,691	370,968	31,036	(17,002)	14,034
Sterling School	237,077	1,647	8,327	27,151	37,125	9,998	69,467	-	207,130	286,595	8,213	(26,192)	(17,979)
Strasburg School District	1,234,897	8,580	43,375	88,583	140,538	52,079	361,843	-	255,027	668,949	42,782	(41,790)	992
Surrey School	3,698,017	25,693	129,892	93,888	249,473	155,955	1,083,572	-	267,627	1,507,154	128,115	(29,675)	98,440
Sw eet Briar Elem School	169,334	1,176	5,948	19,512	26,636	7,141	49,617	-	8,845	65,603	5,866	6,315	12,181
Tgu School District	3,656,524	25,405	128,434	-	153,839	154,205	1,071,414	-	481,946	1,707,565	126,678	(148,225)	(21,547)
Thompson School	3,684,713	25,600	129,424	197,898	352,922	155,394	1,079,674	-	76,864	1,311,932	127,655	51,481	179,136
Tioga School	4,728,697	32,854	166,094	145,828	344,776	199,422	1,385,577	-	339,313	1,924,312	163,823	71,050	234,873
Turtle Lake-Mercer School	1,953,718	13,574	68,624	83,220	165,418	82,393	572,468	-	123,913	778,774	67,685	(36,306)	31,379
Tw in Buttes Elem. School	656,092	4,558	23,045	28,152	55,755	27,669	192,244	-	58,264	278,177	22,730	(23,291)	(561)
Underw ood School	2,158,988	15,000	75,834	-	90,834	91,050	632,615	-	213,436	937,101	74,797	(72,588)	2,209
United School	4,841,306	33,636	170,049	165,488	369,173	204,171	1,418,573	-	350,891	1,973,635	167,724	(34,178)	133,546
Upper Valley Spec Ed	3,643,241	25,312	127,968	61,349	214,629	153,645	1,067,522	-	414,387	1,635,554	126,218	(36,146)	90,072

The accompanying notes are an integral part of the Schedule of Pension Amounts by Employer

	Deferred Outflows of Resources					Deferred Inflows of Resources					Pension Expense		
Employer Name	Net Pension Liability for the year ended June 30, 2021	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Valley - Edinburg School	2,140,222	14,870	75,175	45,394	135,439	90,259	627,116	-	442,634	1,160,009	74,147	(74,031)	116
Valley City School	8,933,052	62,065	313,771	23,710	399,546	376,730	2,617,513	-	576,421	3,570,664	309,480	(273,855)	35,625
Velva School	4,200,599	29,185	147,545	275,813	452,543	177,150	1,230,836	-	105,230	1,513,216	145,527	185	145,712
Wahpeton School	10,324,992	71,735	362,662	325,102	759,499	435,432	3,025,372	-	461,812	3,922,616	357,703	(165,230)	192,473
Ward County	42,997	299	1,510	347	2,156	1,813	12,599	-	3,018	17,430	1,490	(721)	769
Warwick School	2,531,817	17,590	88,929	242,765	349,284	106,773	741,859	-	342,616	1,191,248	87,713	(35,223)	52,490
Washburn School	2,840,890	19,738	99,785	208,956	328,479	119,808	832,422	-	36,563	988,793	98,421	42,012	140,433
West Fargo School	98,145,580	681,891	3,447,332	6,992,457	11,121,680	4,139,059	28,758,072	-	-	32,897,131	3,400,191	3,163,786	6,563,977
West River Student Services	755,790	5,251	26,547	59,410	91,208	31,874	221,457	-	353,270	606,601	26,184	(53,883)	(27,699)
Westhope School	1,614,960	11,220	56,725	37,887	105,832	68,107	473,207	-	122,568	663,882	55,949	(15,942)	40,007
White Shield School	2,284,999	15,876	80,260	342,328	438,464	96,364	669,538	-	465,218	1,231,120	79,162	(27,845)	51,317
Williams Co School Dist #8	4,433,918	30,806	155,740	1,145,556	1,332,102	186,990	1,299,202	-	46,651	1,532,843	153,610	147,086	300,696
Williston School	35,204,558	244,592	1,236,549	5,323,273	6,804,414	1,484,670	10,315,444	-	37,465	11,837,579	1,219,639	1,683,894	2,903,533
Wilmac Special Education	6,951,381	48,296	244,165	1,367,909	1,660,370	293,158	2,036,855	-	157,710	2,487,723	240,826	407,954	648,780
Wilton School	2,167,175	15,057	76,121	96,266	187,444	91,396	635,014	-	48,374	774,784	75,080	18,423	93,503
Wing School	982,313	6,825	34,503	100,407	141,735	41,427	287,832	-	193,469	522,728	34,032	(29,312)	4,720
Wishek School	1,770,509	12,301	62,189	93,884	168,374	74,667	518,785	-	287,275	880,727	61,338	(40,006)	21,332
Wolford School	-	-	-	14,485	14,485	-	-	-	792,109	792,109	-	(153,237)	(153,237)
Wyndmere School	1,989,522	13,823	69,881	43,726	127,430	83,903	582,959	-	287,028	953,890	68,926	(80,304)	(11,378)
Yellowstone Elem. School	801,692	5,570	28,159	55,714	89,443	33,809	234,907	-	52,940	321,656	27,774	(6,114)	21,660
Zeeland School	656,657	4,562	23,065	72,913	100,540	27,693	192,410	-	73,218	293,321	22,749	(23,886)	(1,137)
Total for all entities	**$ 1,053,655,311**	**$ 7,320,530**	**$ 37,009,305**	**$ 60,769,895**	**$ 105,099,730**	**$ 44,435,438**	**$ 308,736,216**	**$ -**	**$ 60,769,895**	**$ 413,941,549**	**$ 36,503,210**	**$ -**	**$ 36,503,210**

Note: Columns may not foot due to rounding.

Note 1 – Nature and Organization of the Pension Plan

North Dakota Teachers' Fund for Retirement

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

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

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

Pension Benefits

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

Tier 1 Grandfathered

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

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

Tier 1 Non-grandfathered

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

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

Tier 2

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

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

Death and Disability Benefits

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

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

Member and Employer Contributions

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

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

Note 2 - Measurement Focus and Basis of Accounting

The schedules are presented in accordance with the standards issued by the Governmental Accounting Standards Board (GASB), which is the nationally accepted standard setting body for establishing accounting principles generally accepted in the United States of America for governmental entities. As prescribed by GASB they are reported using the economic resources measurement focus and the accrual basis of accounting.

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

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Note 3 - Net Pension Liability

The net pension liability was measured as of July 1, 2021, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The Employers' proportions of the net pension liability are based on the Employers' shares of covered payroll in the pension plan relative to the covered payroll of all participating TFFR employers. The components of the net pension liability were as follows:

Total pension liability	$ 4,336,060,141
Plan fiduciary net position	(3,282,404,830)
Net pension liability (NPL)	$ 1,053,655,311

Note 4 – Actuarial Assumptions

The total pension liability in the July 1, 2021, actuarial valuation was determined using the following assumptions, applied to all periods included in the measurement:

Inflation	2.30%
Salary increases	3.80% to 14.80%, varying by service, including inflation and productivity
Investment rate of return	7.25%, net of investment expenses, including inflation
Cost-of-living adjustments	None

For active and inactive members, mortality rates were based on the PubT-2010 Employee table, projected with generational improvement using Scale MP-2019. For healthy retirees, mortality rates were based on 104% of the PubT-2010 Retiree table for retirees and to 95% of the PubT-2010 Contingent Survivor table for beneficiaries, both projected with generational improvement using Scale MP-2019. For disability retirees,

mortality rates were based on the PubNS-2010 Non-Safety Disabled Mortality table projected with generational improvement using Scale MP-2019.

The actuarial assumptions used were based on the results of an actuarial experience study dated March 19, 2020. They are the same as the assumptions used in the July 1, 2021, funding actuarial valuation for TFFR.

The TFFR Board is responsible for establishing investment policy for the fund assets under NDCC 15-39.1-05.2. Benefit payments are projected to occur over a long period of time. This allows TFFR to adopt a long-term investment horizon and asset allocation policy for the management of fund assets. Asset allocation policy is critical because it defines the basic risk and return characteristics of the investment portfolio. Asset allocation targets are established using an asset-liability analysis designed to assist the Board in determining an acceptable volatility target for the fund and an optimal asset allocation policy mix. This asset-liability analysis considers both sides of the plan balance sheet, utilizing both quantitative and qualitative inputs, in order to estimate the potential impact of various asset class mixes on key measures of total plan risk, including the resulting estimated impact of funded status and contribution rates.

The long-term expected rate of return on TFFR investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the TFFR target asset allocation as of June 30, 2021 is summarized in the following table:

2021	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	55.0%	6.9%
Global Fixed Income	26.0%	0.7%
Global Real Assets	18.0%	4.8%
Cash Equivalents	1.0%	-1.0%

As part of the most recent asset/liability study, the total fund real rate of return was upwardly adjusted by 0.50% to reflect a longer investment time horizon than is assumed in the investment consultant's expected returns and to account for above benchmark returns achieved through active management. In order to estimate the nominal rate of return, the real rate of return was adjusted upward by 2.0% for expected inflation.

Discount rate

The discount rate used to measure the total pension liability was 7.25% as of June 30, 2021. The projection of cash flows used to determine the discount rate assumed that member and employer contributions will be made at rates equal to those based on the July 1, 2021, Actuarial Valuation Report. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan

members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, TFFR's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members as of July 1, 2021. Therefore, the long-term expected rate of return on TFFR investments was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2021.

Sensitivity of Net Pension Liability

The following presents the net pension liability of the TFFR employers calculated using the discount rate of 7.25% as of June 30, 2021, as well as what the employers' net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

2021	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Employers' net pension liability	$ 1,582,102,595	$ 1,053,655,311	$ 614,833,478

Note 5 – Deferred Inflows and Deferred Outflows of Resources

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

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

	Year Established	Original Balance	Original Amortization Period (in years)	Amortization Amount During 2021	Outstanding Balance June 30, 2021
Outflows					
Demographics	2015	2,209,258	7	$ 315,610	$ -
Assumptions	2015	171,324,647	7	24,474,947	-
Investments	2019	59,163,355	5	11,832,671	23,665,342
Investments	2020	114,538,151	5	22,907,630	68,722,890
Assumptions	2020	51,813,028	7	7,401,861	37,009,305
Demographics	2021	8,366,320	8	1,045,790	7,320,530
Total Outflows				**$ 67,978,509**	**$ 136,718,067**
Inflows					
Demographics	2016	$ 8,092,800	7	$ 1,156,114	$ 1,156,116
Demographics	2017	10,748,944	7	1,535,563	3,071,129
Investments	2017	103,235,815	5	20,647,163	-
Investments	2018	30,002,998	5	6,000,600	6,000,598
Demographics	2018	27,939,071	7	3,991,296	11,973,887
Demographics	2019	23,494,914	7	3,356,416	13,425,666
Demographics	2020	20,732,097	7	2,961,728	14,808,640
Investments	2021	493,904,813	5	98,780,963	395,123,850
Total Inflows				**$ 138,429,843**	**$ 445,559,886**

	June 30, 2021
Deferred Outflows of Resources	
Difference between expected and actual experience in the Total Pension Liability	$ 7,320,530
Changes in assumptions	37,009,305
Net difference between projected and actual earnings on pension plan investments	-
Total Deferred Outflows of Resources	**$ 44,329,835**
Deferred Inflows of Resources	
Difference between expected and actual experience in the Total Pension Liability	$ 44,435,438
Changes in assumptions	-
Net difference between projected and actual earnings on pension plan investments	308,736,216
Total Deferred Inflows of Resources	**$ 353,171,654**

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

Year ended June 30:	
2022	$ (74,594,728)
2023	(67,438,017)
2024	(77,735,121)
2025	(96,651,456)
2026	5,485,923
Thereafter	2,091,580
Net deferred outflows/(inflows) of resources	**$ (308,841,819)**

Deferred outflows of resources and deferred inflows of resources resulting from changes in an individual employer's proportionate share are amortized over a closed period equal to the average of the expected remaining service lives of all members who are provided with pensions through the pension plan (active employees and inactive employees) for the period during which the change occurred. Because these deferred amounts and their amortization are specific to individual employers and offset on a collective basis, they are not included in the tables above.

Note 6 – Collective Pension Expense

The components of allocable pension expense for the year ended June 30, 2021 (excluding employer specific pension expense for changes in proportion) are as follows:

Service cost	$	87,088,239
Interest on the total pension liability		300,698,090
Projected earnings on plan investments		(190,267,717)
Member contributions		(90,557,210)
Contributions - purchased service credit		(2,559,121)
Contributions - other		(126,112)
Administrative expenses		2,678,375
Current year recognition of:		
Changes in assumptions	$	31,876,808
Difference between expected and actual experience		(11,639,717)
Difference between projected and actual earnings on pension plan investments		(90,688,425)
Change of benefit terms		-
Total pension expense	**$**	**36,503,210**

Note 7 - Additional Financial and Actuarial Information

Additional financial information supporting the preparation of the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer (including the disclosure of the net pension liability and the unmodified audit opinion on the financial statements) is located in the North Dakota Retirement and Investment Office's Annual Comprehensive Financial Report for the fiscal year ended June 30, 2021. The supporting actuarial information is included in the June 30, 2021, GASB Statements No. 67 and 68 Accounting and Financial Reporting for Pensions actuarial valuation for the retirement plan. The additional financial and actuarial information is available at https://www.rio.nd.gov/teachers-fund-retirement-employers or by contacting RIO at: ND Retirement and Investment Office, 3442 East Century Avenue, P.O. Box 7100, Bismarck, ND 58507-7100 or by calling (701) 328-9885.

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INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Governor Doug Burgum
The Legislative Assembly
David Hunter, Executive Director/CIO
State Investment Board
Teacher's Fund for Retirement Board
North Dakota Retirement and Investment Office

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the schedule of employer allocations and the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense as of and for the year ended June 30, 2021 (specified column totals), included in the schedule of pension amounts by employer of the North Dakota Retirement and Investment Office - North Dakota Teachers' Fund for Retirement (TFFR), and have issued our report thereon dated November 2, 2021.

Internal Control over Financial Reporting

In planning and performing our audits, we considered TFFR's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinion on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, but not for the purpose of expressing an opinion on the effectiveness of TFFR's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of TFFR's internal control over financial reporting.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audits we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether TFFR's schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of TFFR's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering TFFR's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
November 2, 2021

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MEMORANDUM

Item IV.B.

TO: **TFFR Board**
FROM: **Jan Murtha, Executive Director**
DATE: **January 25, 2022**
RE: **2023 Legislative Planning & GPR Committee Update**

The GPR Committee met on January 12, 2022 to discuss potential legislative changes. The attached document reflects a summary of the statutes discussed and for which the committee is either recommending changes or requesting additional information. Committee Chair Cody Mickelson and RIO staff will be present at the meeting to present the statutes under consideration and the recommendations if any.

Pursuant to N.D.C.C. 15-39.1-05.2(5), the TFFR Board of Trustees must:

"Shall submit to the legislative management's employee benefits programs committee any necessary or desirable changes in statutes relating to the administration of the fund."

Any proposed changes must be submitted to the Employee Benefits Programs Committee no later than March, 2022.

ACTION REQUESTED: Discuss plan for further 2023 Legislative Review.

CHAPTER 15-39.1
TEACHERS' FUND FOR RETIREMENT

15-39.1-04. Definitions.

For purposes of this chapter, unless the context or subject matter otherwise requires:

1. "Actuarial equivalent" means the amount calculated to be of equal actuarial value to the benefit otherwise payable when computed on the basis of actuarial assumptions and methods adopted by the board.
2. "Beneficiary" means a person, estate, trust, or organization designated in writing by a participating member to receive benefits provided by this plan, in receipt of benefits, or otherwise provided under section 15-39.1-17.
3. "Board" means the board of trustees of the teachers' fund for retirement.
4. "Contract" means a written agreement with a school board or other governing body of a school district or special education unit of this state or a letter of appointment by a state institution, state agency, or other employer participating in the fund.
5. "Fund" means the teachers' fund for retirement.
6. "Interest" as applied to member assessments is an annual rate of six percent compounded monthly and as applied to the repurchase of credit for withdrawn years is six percent compounded annually.
7. "Normal retirement age" means the age at which a member becomes eligible for monthly lifetime normal unreduced retirement benefits as provided in subsection 1 of section 15-39.1-10.
8. "Retirement" means cessation of covered employment and acceptance of a benefit under former chapter 15-39, or chapter 15-39.1 or 15-39.2.
9. "Retirement annuity" means the payments made by the fund to a member after retirement~~, these payments beginning on the first or fifteenth day of the month following eligibility for a benefit~~.
10. "Salary" means a member's earnings in eligible employment under this chapter for teaching, supervisory, administrative, and extracurricular services during a plan year reported as salary on the member's federal income tax withholding statements plus any salary reduction or salary deferral amounts under 26 U.S.C. 125, 132(f), 401(k), 403(b), 414(h), or 457, as amended. "Salary" includes amounts paid to members for performance of duties, unless amounts are conditioned on or made in anticipation of an individual member's retirement or termination. The annual salary of each member taken into account in determining benefit accruals and contributions may not exceed the annual compensation limits established under 26 U.S.C. 401(a)(17)(B), as amended, as adjusted for increases in the cost of living in accordance with 26 U.S.C.

    401(a)(17)(B), as amended. A salary maximum is not applicable to members whose participation began before July 1, 1996. "Salary" does not include:

    a. Fringe benefits or side, nonwage, benefits that accompany or are in addition to a member's employment, including insurance programs, annuities, transportation allowances, housing allowances, meals, lodging, or expense allowances, or other benefits provided by a member's employer.
    b. Insurance programs, including medical, dental, vision, disability, life, long-term care, workforce safety and insurance, or other insurance premiums or benefits.
    c. Payments for unused sick leave, personal leave, vacation leave, or other unused leave.
    d. Early retirement incentive pay, severance pay, or other payments conditioned on or made in anticipation of retirement or termination.
    e. Teacher's aide pay, referee pay, bus driver pay, or janitorial pay.
    f. Amounts received by a member in lieu of previously employer-provided benefits or payments that are made on an individual selection basis.
    g. Signing bonuses as defined under section 15.1-09-33.1.
    h. Other benefits or payments not defined in this section which the board determines to be ineligible teachers' fund for retirement salary.

Commented [MJ1]: Segal will provide information regarding peers.

Commented [MJ2]: To provide clarity in the definition.

11. "State institution" includes North Dakota vision services - school for the blind, the school for the deaf, and the North Dakota youth correctional center.
12. "Teacher" means:
    a. All persons licensed by the education standards and practices board who are contractually employed in teaching, supervisory, administrative, or extracurricular services by a state institution, multidistrict special education unit, area career and technology center, regional education association, school board, or other governing body of a school district of this state, including superintendents, assistant superintendents, business managers, principals, assistant principals, and special teachers. For purposes of this subdivision, "teacher" includes persons contractually employed by one of the above employers to provide teaching, supervisory, administrative, or extracurricular services to a separate state institution, state agency, multidistrict special education unit, area career and technology center, regional education association, school board, or other governing body of a school district of this state under a third-party contract.
    b. The superintendent of public instruction, assistant superintendents of public instruction, county superintendents, assistant superintendents, supervisors of instruction, the professional staff of the department of career and technical education, the professional staff of the center for distance education, the executive director and professional staff of North Dakota united who are members of the fund on July 1, 1995, the professional staff of an interim school district, and the professional staff of the North Dakota high school activitiesassociation who are members of the fund on July 1, 1995.
    c. The executive director and professional staff of the North Dakota council ofschool administrators who are members of the fund on July 1, 1995, and licensedstaff of teachers centers, but only if the person was previously a member of and has credits in the fund.
    d. Employees of institutions under the control and administration of the state board of higher education who are members of the fund on July 16, 1989.
13. "Tier one grandfathered member" for purposes of sections 15-39.1-10 and 15-39.1-12 means a tier one member who, as of June 30, 2013, is vested as a tier one member in accordance with section 15-39.1-11; and
    a. Is at least fifty-five years of age; or
    b. Has a combined total of years of service credit in the plan and years of age which equals or exceeds sixty-five.
14. "Tier one member" means a teacher who has credit in the system on July 1, 2008, and has not taken a refund pursuant to section 15-39.1-20 after June 30, 2008.
15. "Tier one nongrandfathered member" for purposes of sections 15-39.1-10 and 15-39.1-12 means a tier one member who does not qualify as a tier one grandfatheredmember.
16. "Tier two member" means a teacher who is not a tier one member.

15-39.1-05.2. Board authority - Continuing appropriation.

The board:

1. Has the powers and privileges of a corporation, including the right to sue and be sued in its own name. The venue of all actions to which the board is a party must be Burleigh County.
2. Shall establish investment policy for the trust fund under section 21-10-02.1. The investment policy must include:
    a. Acceptable rates of return, liquidity, and levels of risk; and
    b. Long-range asset allocation targets.
3. Shall arrange for actuarial and medical consultants. The board shall cause a qualified, competent actuary to be retained on a consulting basis. The actuary shall:
    a. Make a valuation of the liabilities and reserves of the fund and a determination of the contributions required by the fund to discharge its liabilities and pay

administrative costs;

b. Recommend to the board rates of employer and employee contributions required, based upon the entry age normal cost or other accepted actuarial method, to maintain the fund on an actuarial reserve basis;

c. Once every five years make a general investigation of the actuarial experience under the fund, including mortality, retirement, employment turnover, and other items required by the board;

d. Recommend actuarial tables for use in valuations and in calculating actuarial equivalent values based on the investigation provided for in subdivision c; and

e. Perform other duties assigned by the board.

4. May pay benefits and consultant fees as necessary which are hereby appropriated from the fund.

5. Shall submit to the legislative management's employee benefits programs committee any necessary or desirable changes in statutes relating to the administration of the fund.

6. Shall determine appropriate levels of service to be provided to members, including benefits counseling and preretirement programs.

7. Shall~~, through resolution,~~ inform the state investment board, which is the administrative board of the retirement and investment office, the levels of services, goals, and objectives expected to be provided through the retirement and investment office.

Commented [MJ3]: To provide flexibility in method.

15-39.1-08. Compensation of members.

Members of the board, excluding ex officio members, are entitled to receive one hundred forty-eight dollars as compensation per day and necessary mileage and travel expenses as provided in sections 44-08-04 and 54-06-09 for attending meetings of the board. No member of the board may lose regular salary, vacation pay, vacation or any personal leave, or be denied right of attendance by the state or political subdivision thereof while serving on official business of the fund.

15-39.1-12.2. Benefit payments to alternate payee under domestic relations order.

1. The board shall pay retirement benefits in accordance with the applicable requirements of any qualified domestic relations order. The board shall review adomestic relations order submitted to it to determine if the domestic relations order is qualified under this section and under rules established by the board for determining the qualified status of domestic relations orders and administering distributions under the qualified orders. Upon determination that a domestic relations order is qualified,the board shall notify the teacher and the named alternate payee of its receipt of the qualified domestic relations order.

~~2.~~ A "qualified domestic relations order" for purposes of this section means any judgment, decree, or order, including approval of a property settlement agreement, which relates to the provision of child support, spousal support, or marital property rights to a spouse, former spouse, child, or other dependent of the teacher, which is made pursuant to a North Dakota domestic relations law, and which creates or recognizes the existence of an alternate payee's right to, or assigns to an alternate payee the rightto, receive all or a part of the benefits payable to the teacher. A qualified domestic relations order may not require the board to provide any type or form of benefit, or any option, not otherwise provided under the fund, or to provide increased benefits as determined on the basis of actuarial value. However, a qualified domestic relations order may require the payment of benefits at the early retirement date notwithstanding that the teacher has not terminated eligible employment. ~~A qualified domestic relationsorder must specify:~~

~~a. The name and last-known mailing address of the teacher and the name and mailing address of each alternate payee covered by the order;~~

~~b. The amount or percentage of the teacher's benefits to be paid by the board to each alternate payee;~~

~~c. The number of payments or period to which the order applies; and~~

~~d. Each retirement plan to which the order applies.~~

Commented [MJ4]: Details/order requirements are found in administrative rule. Removing this language provides clarity of requirements.

15-39.1-15. Withdrawal from fund - Return to teaching.

A teacher who has withdrawn from the fund as set forth in this chapter may, by returning to teach in a public school or state institution of this state, regain service credit for prior teaching by making the required payment. The required payment, if made within five years of returning to teach in covered employment, is the amount that was withdrawn with interest. In all other cases, the purchase cost must be on an actuarial equivalent basis. If the teacher returns to teach in covered employment after June 30, 2008, the teacher becomes a tier two member regardless of whether the teacher repurchases service credit earned while the teacher was a tier one member.

Commented [MJ5]: Segal will review impact.

15-39.1-16. Option of teachers eligible to receive annuities.

The board shall adopt rules providing for the receipt of retirement benefits in the following optional forms:

Option one. Upon the death of the teacher, the reduced retirement allowance must be continued throughout the life of, and paid to, the teacher's designated beneficiary named at the time of retirement. If the person designated to receive the teacher's reduced retirement allowance predeceases the teacher, the reduced retirement allowance must be converted to a single life retirement annuity under which benefit payments, if the person designated died priorto July 1, 1989, must begin on July 1, 1989, or, if the person designated dies on or after July 1, 1989, must begin on the first day of the month following the death of the person designated.

Option two. Upon the death of the teacher, one-half of the reduced retirement allowance must be continued throughout the life of, and paid to, the teacher's designated beneficiary named at the time of retirement. If the person designated to receive the teacher's reduced retirement allowance predeceases the teacher, the reduced retirement allowance must beconverted to a single life retirement annuity under which benefit payments, if the persondesignated died prior to July 1, 1989, must begin on July 1, 1989, or, if the designated beneficiary dies on or after July 1, 1989, must begin on the first day of the month following the death of the person designated.

Option three. Upon the death of the teacher within twenty years of the commencement of annuity payments, the payments must be continued for the remainder of the twenty-year period to the teacher's designated beneficiary. This payment option is available to teachers who retire after July 31, 2003.

Option four. Upon the death of the teacher within ten years of the commencement of annuity payments, the payments must be continued for the remainder of the ten-year period to the teacher's designated beneficiary.

Option five. ~~Level retirement income with social security option, which is available to teachers retiring before social security is~~ payable~~.~~

Commented [MJ6]: Remove rarely used option.

Option six. Partial lump sum distribution option. A member who is eligible for an unreduced service retirement annuity under section 15-39.1-10 and who retires after July 31, 2003, may make a one-time election to receive a portion of the retirement annuity paid in a lump sum distribution upon retirement, pursuant to rules adopted by the board.

1. The eligible member may select a standard service retirement annuity or an optional service retirement annuity described in this section, together with a partial lump sum distribution. ~~The partial lump sum distribution option is not available to members who have selected option five, the level income retirement option.~~ This option is not available to disabled members or beneficiaries of deceased members. The partial lump sum distribution option may be elected only once by a member and may not be elected by a retiree.
2. The amount of the partial lump sum distribution under this section is twelve months of a standard service retirement annuity computed under section 15-39.1-10 and payable at the same time that the first monthly payment of the annuity is paid.
3. The service retirement annuity selected by the member must be actuarially reduced to reflect the partial lump sum distribution option selected by the member.
4. Before a retiring member selects a partial lump sum distribution under this section, the fund shall provide a written notice to the member of the amount by which the member's annuity will be reduced because of the selection.

The amount of the reduced retirement allowance payable upon the exercise of any of these options must be computed upon an actuarial basis through the use of standard actuarial tables

and based upon the ages of the teacher and the teacher's designated beneficiary. A member's spouse, if designated as beneficiary, must consent in writing to the member's choice of benefit payment option for any benefit payments commencing after June 30, 1999. The board may rely on the member's representations about that person's marital status in determining the member's marital status. The spouse's written consent must be witnessed by a notary or a plan representative. If the spouse does not consent, or cannot be located, the member's annuity benefit must be paid using option two, the fifty percent joint and survivor option.

15-39.1-19.1. Retired teachers return to active service - Annuities discontinued on resumption of teaching over annual hour limit.

1. a. Except as otherwise provided in section 15-39.1-19.2, a retired teacher who is receiving a retirement annuity under chapter 15-39, 15-39.1, or 15-39.2 may not return to covered employment until thirty calendar days have elapsed from the member's retirement date. A retired member may then return to covered employment under an annual hour limit and continue receiving a monthly retirement benefit. The annual hour limit is based on the length of the re-employed retiree's contract as follows:
   (1) Retiree reemployment of nine months or less, annual limit is seven hundred hours;
   (2) Retiree reemployment of ten months, annual limit is eight hundred hours;
   (3) Retiree reemployment of eleven months, annual limit is nine hundred hours; or
   (4) Retiree reemployment of twelve months, annual limit is one thousand hours.

   b. Employment as a noncontracted substitute teacher does not apply to the annual hour limit. Professional development and extracurricular duties do not apply to the annual hour limit.

   c. The retired member and the retired member's employer must notify the fund office in writing within thirty days of the retired member's return to coveredemployment.

   d. A retired member who returns to teaching shall pay the member contributions required by section 15-39.1-09 on the salary received by the retired member. The member contributions must be included in the retired member's account value and may not be refunded except as provided under subdivision a of subsection 2 of section 15-39.1-19.1 and section 15-39.1-17.

   e. A participating employer who employs a retired member under this section shall pay the employer contributions required by section 15-39.1-09 on the salary of the retired member.

   f. A retired teacher who returns to teaching and does not exceed the annual hour limit must be treated as retired for all other purposes under this chapter. A retired teacher may not earn any additional service during the period of re-employment. The retired teacher's benefits may not be adjusted to reflect changes in the retired teacher's age or final average monthly salary at the end of the period of re-employment, any optional form of payment elected under section 15-39.1-16 remains effective during and after the period of re-employment, and additional benefits normally available to an active member, such as disability benefits, are not available to a retired teacher re-employed under this section.

   g. A retired teacher who returns to teaching and exceeds the annual hour limit must immediately notify the fund office in writing. Failure to notify the fund office results in the loss of one month's annuity benefit for the member. The retired member's monthly benefit must be discontinued the first of the month following the date the member reaches the annual hour limit.

2. Upon the retired teacher's subsequent retirement, the member's benefit must be resumed as follows:
   a. If the teacher subsequently retires with less than two years of additional earned credited service, the teacher's contributions paid to the fund after the member's benefit was suspended must be refunded in accordance with section 15-39.1-20

Commented [MJ7]: Segal to review impact of creating consistency between reporting of hours and contributions.

and the teacher is entitled to receive the discontinued annuity, plus any postretirement benefit adjustments granted during the period of re-employment, the first day of the month following the teacher's re-retirement.

b. If the teacher subsequently retires with two or more but less than five years of additional earned credited service, the retired person's annuity is the greater of the sum of the discontinued annuity, plus an additional annuity computed according to this chapter based upon years of service and average salaries earned during the period of re-employment plus any postretirement benefit adjustments granted during the period of re-employment, or a recalculated annuity computed according to this chapter based on total years of service credit earned during both employment periods offset by the actuarial value of payments already received. The new annuity is payable the first day of the month following the member's re-retirement.

c. If the teacher subsequently retires with five or more years of additional earned credited service, the retired person's annuity is the greater of the sum of the discontinued annuity plus an additional annuity based upon years of service and average salaries earned during the period of re-employment plus any postretirement benefit adjustments granted during the period of re-employment, or a recalculated annuity based on all years of service computed under subsection 2 of section 15-39.1-10. The new annuity is payable the first day ofthe month following the member's re-retirement.

15-39.1-19.2. Retired teachers return to active service - Critical shortage areas and disciplines - Rules.

1. A retired teacher who is receiving a retirement annuity under chapter 15-39, 15-39.1, or 15-39.2 may elect to return to teaching without losing any benefits under the provisions of this section or elect to return to teaching under the provisions of section 15-39.1-19.1. To return to teaching under this section, a retired teacher must:
   a. Return to teach in a critical shortage geographical area or subject discipline as determined by the education standards and practices board ~~by rule~~;
   b. If retired after January 1, 2001, have been receiving a retirement annuity for at least one year. A retired teacher may perform noncontracted substitute teaching duties but may not engage in full-time or part-time teaching duties during the one-year separation from service; and
   c. Notify the fund office in writing within thirty days of the retired member's return to covered employment. The retired member's employer must also notify the fund office in writing within thirty days of the retired member's return to covered employment.
2. A retired teacher who returns to teaching under this section shall pay the member contributions required by section 15-39.1-09 on the salary of the retired member. The member contributions must be included in the retired member's account value and may not be refunded except as provided under section 15-39.1-17. A retired teacher who returns to teaching under the provisions of this section must be treated as retired for all other purposes under this chapter. A retired teacher may not earn any additionalservice during the period of re-employment. The retired teacher's benefits may not be adjusted to reflect changes in the retired teacher's age or final average monthly salary at the end of the period of re-employment, any optional form of payment elected under section 15-39.1-16 remains effective during and after the period of re-employment, andadditional benefits normally available to an active member, such as disability benefits, are not available to a retired teacher re-employed under this section.
3. A participating employer who employs a retired member under this section shall pay the employer contributions required by section 15-39.1-09 on the salary of the retired member.

15-39.1-24. Purchase of additional credit.

Commented [MJ8]: Clarify.

Commented [MJ9]: Segal will provide comparisons with peers re: what are the common options.

Prior to retirement a teacher who provides proof of eligibility under rules adopted by the board may purchase additional credit for use toward retirement in the following instances and manner:

1. A teacher may purchase service credit for years of elementary or secondary teaching service at an accredited out-of-state public, private, or parochial school.
2. A teacher not qualified to receive military credit under the Uniformed Services Employment and Reemployment Rights Act of 1994 [Pub. L. 103-353; 108 Stat. 3150; 38 U.S.C. 4301-4307] or Veterans' Reemployment Rights Act of 1991 [Pub. L. 93-508; 88 Stat. 3150] who has received an honorable discharge from military service of the United States of America may purchase military credit for no more than four years of active service, upon filing application and proof with the board.
3. A teacher may purchase service credit for credit lost while on an approved leave of absence from teaching duties.
4. A teacher may purchase service credit for the time during each legislative session spent serving as a member of the legislative assembly while holding eligible employment under this chapter. As an alternative to a teacher purchasing service credit under this subsection, a teacher and the governmental body employing the teacher may enter into an agreement by which payment for service credit for time spent during each legislative session by the teacher serving as a member of the legislative assembly is made pursuant to section 15-39.1-09. The agreement must provide that contributions made pursuant to section 15-39.1-09 are calculated basedon the teacher's annual salary without reduction for a leave of absence taken by the teacher during the legislative session.
5. A teacher may purchase credit for years of elementary or secondary teaching service if employed by an agency of the United States government.
6. A teacher who is elected president of a professional educational organization recognized by the board and who serves in a full-time capacity in lieu of teaching may purchase service credit for the time spent serving as president. As an alternative to purchasing service credit under this subsection, a teacher and the governmental body employing the teacher may enter into an agreement under which payment for service credit for the time spent as president of the professional educational organization is made pursuant to section 15-39.1-09. The agreement must provide that contributions made pursuant to section 15-39.1-09 are calculated based on the teacher's annual salary as president.
7. A teacher may purchase service credit for years of elementary or secondary teaching service in an accredited North Dakota private or parochial school.
8. A teacher who has at least five years of teaching service credit in the fund may purchase credit not based on service for use toward retirement eligibility and benefits. The purchase of service credit for such nonqualified service as defined under section 415(n) of the Internal Revenue Code, as amended, is limited to an aggregate of five years.
9. A teacher who had that person's North Dakota teaching service interrupted by military service in any branch of the United States armed forces and received an honorable discharge may receive credit for military service pursuant to applicable federal veterans' rights acts including the Uniformed Services Employment andReemployment Rights Act of 1994 [Pub. L. 103-353; 108 Stat. 3150; 38 U.S.C. 4301-4307] or the Veterans' Reemployment Rights Act of 1991 [Pub. L. 93-508; 88 Stat. 3150].
10. With the exception of military service, purchased service credit is not eligible for credit if the years claimed also qualify for retirement benefits from another retirement system.
11. The fund may accept eligible rollovers, direct rollovers, and trustee-to-trustee transfers from eligible retirement plans specified under Internal Revenue Code section 402(c)(8)(B), as amended, to purchase refunded service credit under section 15-39.1-15 and to purchase additional service credit under section 15-39.1-24. The board shall adopt rules to ensure that the rollovers and transfers comply with the requirements of the Internal Revenue Code and internal revenue service regulations. The total amount rolled over or transferred into the fund may not exceed the amount due to purchase service credit.
12. The amount of additional service eligible to be purchased under this section must be

credited to the teacher when the teacher has made the required payment. Except as provided in subsections 4, 6, and 9, the purchase cost must be on an actuarialequivalent basis.

15-39.1-27. Computation of years of service.

In computing the terms of service of a member under this chapter, for a member employed full time, a year is deemed to be one hundred seventy-five days of compensation. Employment less than one hundred seventy-five days of compensation is not deemed to be a full year but only as the proportion of a year as the number of hours employed in each year of service bears to seven hundred hours.

Commented [MJ10]: Segal will provide better phrasing option.

NORTH Dakota | Retirement and Investment
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MEMORANDUM

TO: **TFFR Board**
FROM: **Jan Murtha, Executive Director**
DATE: **January 25, 2022**
RE: **PAS Project Update**

The following summarizes the efforts of RIO agency staff to complete Phase 1 and initiate Phase 2 of the PAS project from July 2021 through the current date:

- All Phase 1 Deliverables have been accepted by Staff.
- Phase 2 has been initiated (Procurement of Solution).
- The ESC approved contracting with Segal for assistance through Phase 3 of the PAS Project.
- 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 vacancies in the division have been filled.
- NDIT, RIO staff, and Segal meet weekly to discuss PAS project status and review progress on interim recommendations.
- The vendor solution RFP was issued June 1, 2021; responses were due July 21, 2021.
- Vendor responses were received, reviewed, and an initial analysis was conducted.
- We are currently in the contract negotiating phase of the procurement process prior to award.
- We anticipate the contract negotiating phase to complete within February 2022. The ESC may issue a notice of award at the conclusion of contract negotiations and Phase 3 (final phase) will initiate.

BOARD INFORMATION ONLY. No board action requested.

Confidential items will be sent directly to Board members

TFFR Ends
Annual Review
Year Ended June 30, 2021

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

Ends Policy: Membership Data and Contributions

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

- **Collections and Payments**

  Collected member and employer contributions totaling $188.8 million from 210 employers and $2.6 million from members for the purchase of service credit.

  Paid out $235.2 million in pension benefits and $5.9 million in refunds and rollovers totaling $241.1 million for the year.

  About 86% of employers electronically report contributions to TFFR. This comprises over 98% of the active membership.

  As of June 30, 2021, 183 employers are reporting using TFFR Employer Online Services.

  Assessed 1 reporting penalty and did not withhold foundation payments from any school districts. TFFR waived the1 penalty. Employer reporting penalties include late reporting of contributions and failure to provide documentation in a timely manner (e.g. new member forms, return to teach forms, employer compliance audit documentation.)

  6 employers modified employer payment plan model election.

- **Employer Summary Report and Member Statements**

  Mailed 9,068 annual statements to retired members in December 2020.
  Mailed FY2021 Employer Summary Report to each employer in August 2021.
  Prepared 14,623 Annual Statements for non-retiree's online accounts in September 2021.
  Mailed 23,606 notices to all members and beneficiaries in September 2021, notifying members newsletters and active annual statements are found online.

- **Employer Outreach Programs & Communications**

  The 2020 School Board and School Business Manager Association Annual Conference scheduled in October 2020, was cancelled due to COVID-19.

  All new business manager trainings held at RIO were cancelled due to COVID-19.

  The Spring Business Manager Workshop was held virtually in May 2021 where Tami Volkert and Denise Weeks presented TFFR material. There were approximately 105 attendees.

  GASB 68 2020 data updated and added to website.

  Briefly employer newsletter (3 publications sent electronically)

Ends Policy: **Member Services**

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

- **Outreach Program Statistics**

  316 attended outreach programs (plus convention participants)
  Retirement Services staff traveled 0 miles

- **Retirement Education Workshops**

  Cancelled due to COVID-19 - Retirement Education Workshops are generally held at two sites each year in July and rotate between Bismarck, Minot, Fargo, and Grand Forks. Additional workshops will be added if requested by an employer and minimum attendance can be met.

- **Retirement 101 Workshops –** None requested in fiscal year 2020-21

- **Group and Individual Counseling Sessions** – All Virtual - 135 attended

- **Local Office Counseling –** 31 members

- **Group Presentations -** NDCEL – Virtual - 150 attended

- **Conferences and Conventions**

  ND Career and Technical Education Convention - Cancelled
  ND Retired Teachers Convention – n/a
  DPI Educators Conference - Bismarck
  ND School Board Convention – n/a
  NDCEL Annual Conference - Virtual
  CREA Winter Conference – n/a
  School In-Services – n/a

- **Member Communications**

  Report Card non-retired newsletter (2 publications)
  Retirement Today retiree newsletter (2 publications)
  Updated TFFR Fast Facts handout
  Marketed Member Online with email blasts

- **NDRIO Website**

  NDRIO is working with NDIT to find a better method for tracking website traffic.

  The webcasts in the training library were viewed 199 times in FY21.

- **TFFR Member Online**

  As of June 30, 2021, 6,559 members have signed up for TFFR Member Online Services.

Ends Policy: **Account Claims**

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

- **Annuity Payments**

  Distributed $235.2 million in pension benefits to 9,262 retired members and beneficiaries.

- **Monthly Payroll Deductions** (July 1, 2021 payroll – total 9,220)

Federal tax withholding	7,024	76%
ND state tax withholding	5,768	63%
PERS health insurance	598	6%
PERS dental insurance	373	4%
PERS vision insurance	206	2%
PERS life insurance	19	<1%

- **Refunds, Rollovers & Transfers**

  Distributed refund and rollover payments of $5.9 million to 222 participants during the fiscal year. Approximately 44% of the refunding members rolled over their refund payment to an IRA or another eligible plan.

- **Processed Claims for Benefits**

Refunds	124
Rollovers	98
Retirements	401
Disabilities	5
Survivor annuitants	4
Continuing annuitants	64

- **Member Account Activity**

New members	1,004
Deaths	188
Pop ups	53
Purchase requests	142
Retiree payroll notices	8,261

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

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

- **Actuarial Services**

  The annual actuarial valuation for July 1, 2021, was presented to the TFFR Board by Segal on November 18, 2021.

- **External Audit**

  An unqualified opinion was issued by independent auditors, Clifton Larson Allen, LLP, regarding RIO's financial statements for the year ending June 30, 2021. Clifton Larson Allen, LLP presented the report to the SIB Audit Committee on November 16, 2021.

- **Internal Audit**

  The annual audit activities report was presented to the TFFR Board on September 23, 2021. The report included information on the annual Employer Participant Data/Salary Review Audit, File Maintenance Audit, succession planning, and Pension Administration Modernization Project.

- **Other**

  Received Certificate of Achievement in Financial Reporting from GFOA for June 30, 2020, Annual Financial Report.

  Received 2021 recognition award for pension plan administration from the Public Pension Coordinating Council.

TFFR Retirement Statistics

>Participation in Outreach Programs

>Service Purchase Statistics

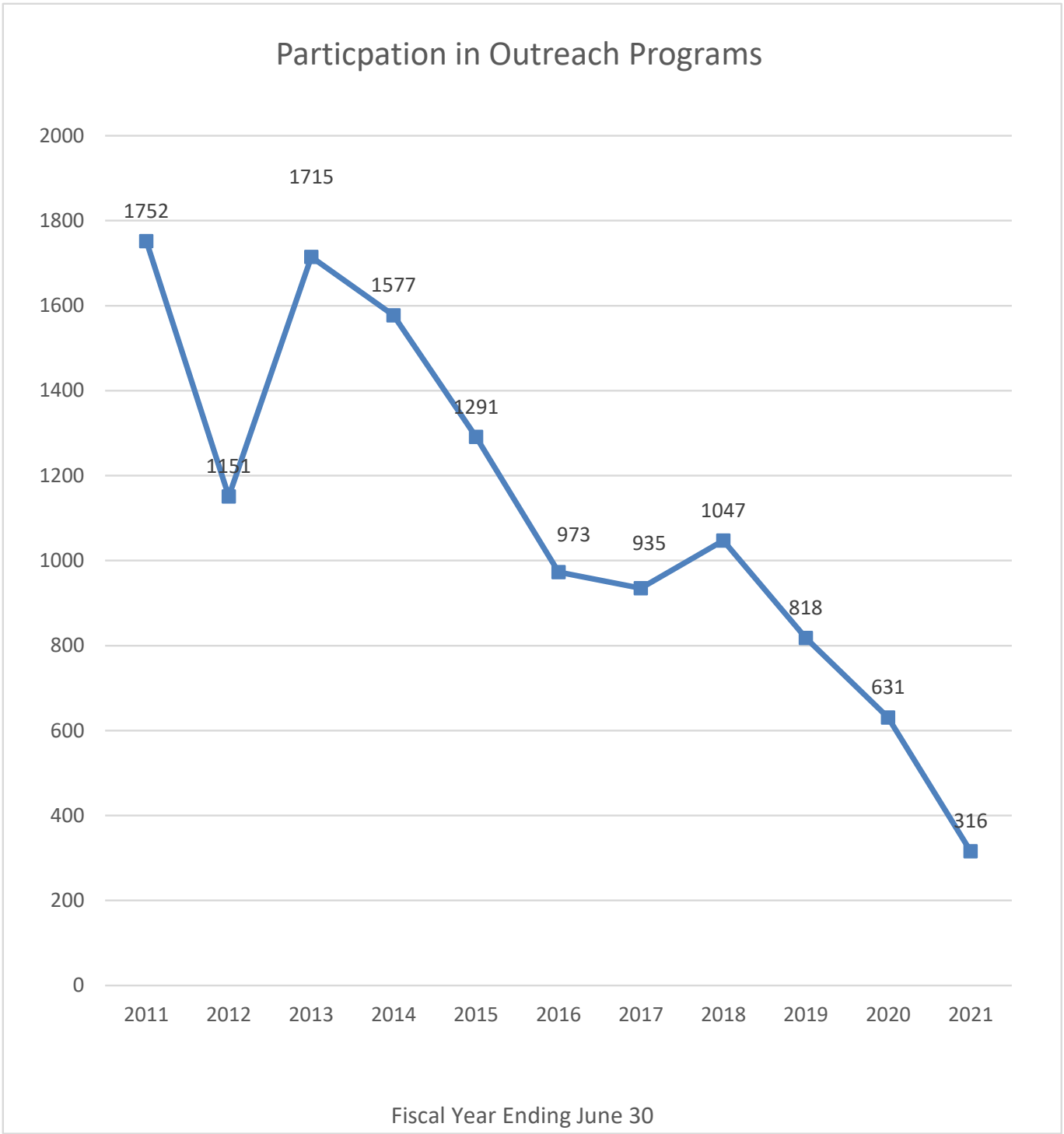
>Active Membership Tier Statistics

>Service Retiree History & Option Usage

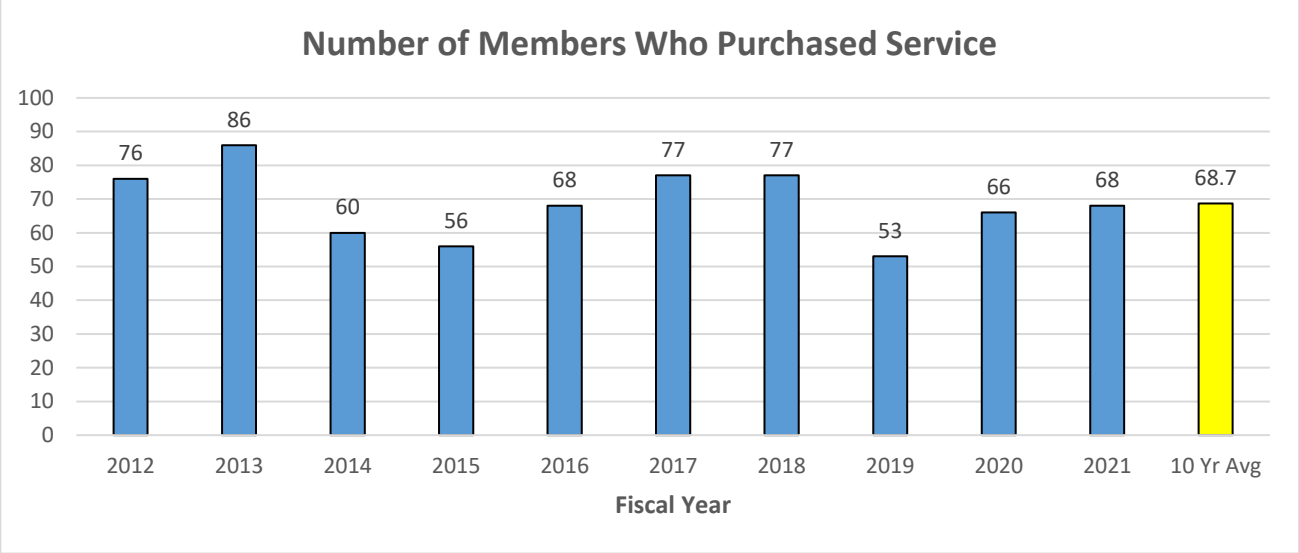
>Retiree Statistics

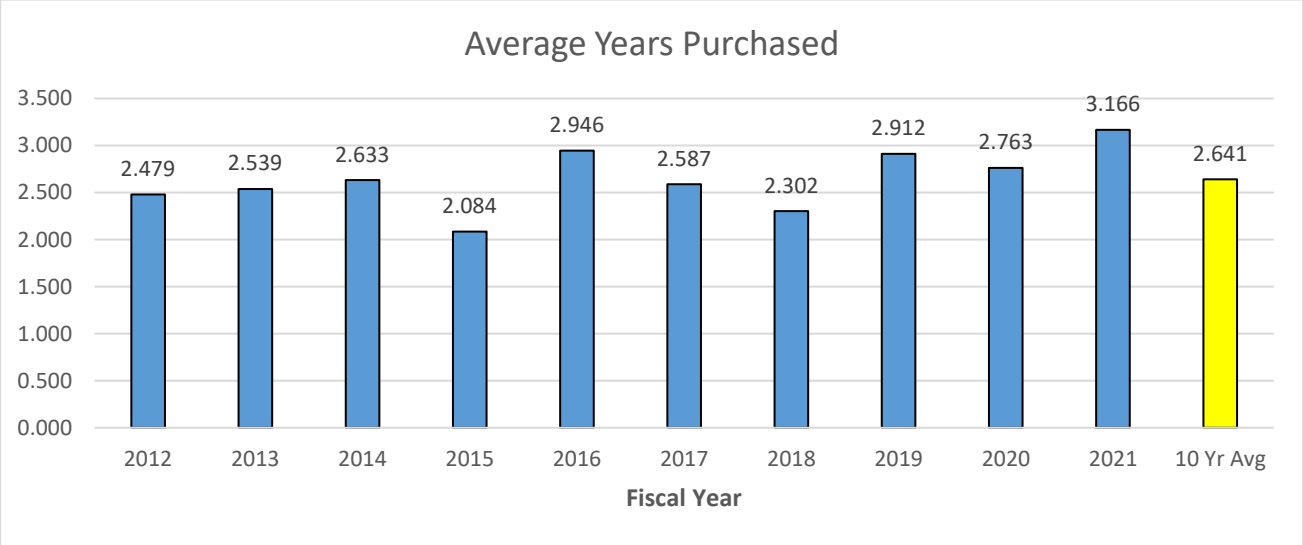
>Disability Retirements

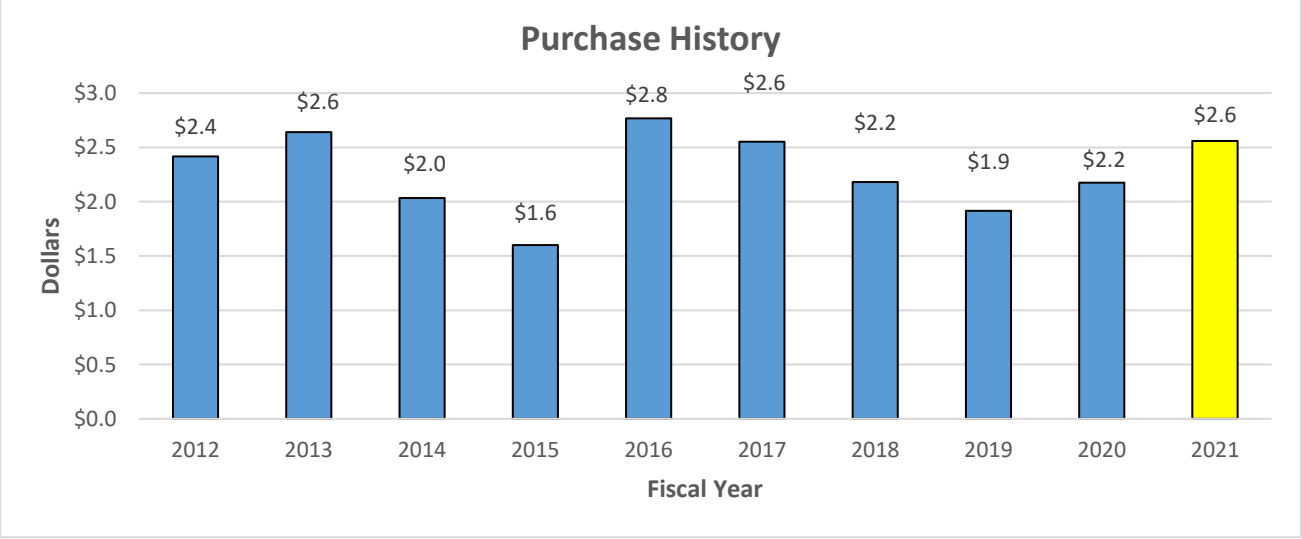
>Employer History & Current Employer Payment Model Statistics

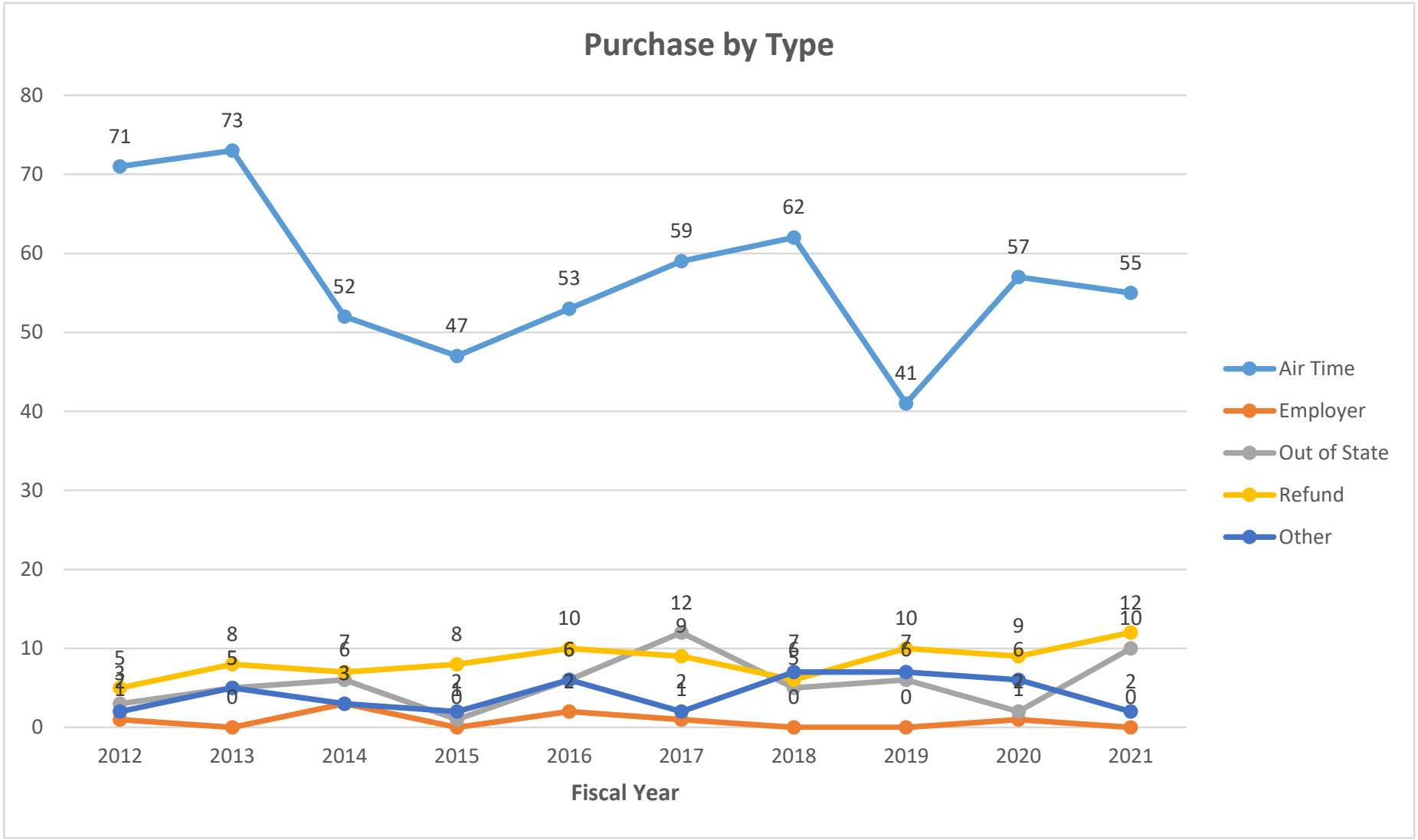

Particpation in Outreach Programs
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1752
1151
1715
1577
1291
973
935
1047
818
631
316
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fiscal Year Ending June 30

Service Purchase Statistics 2021

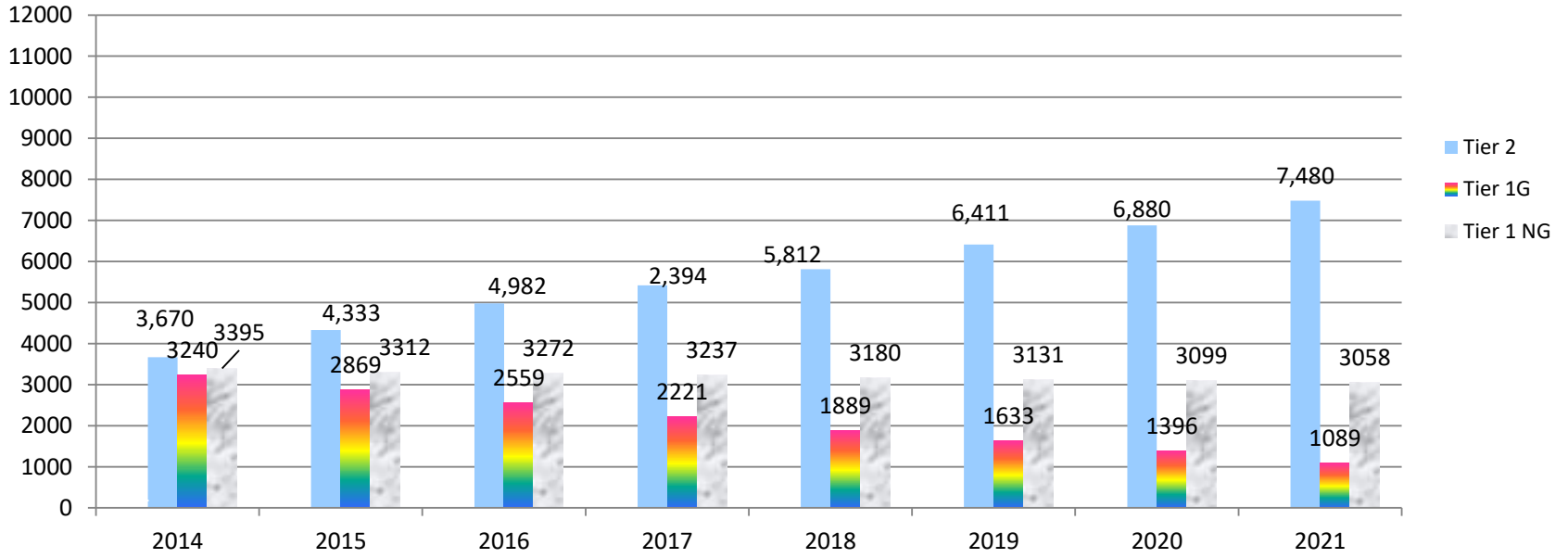


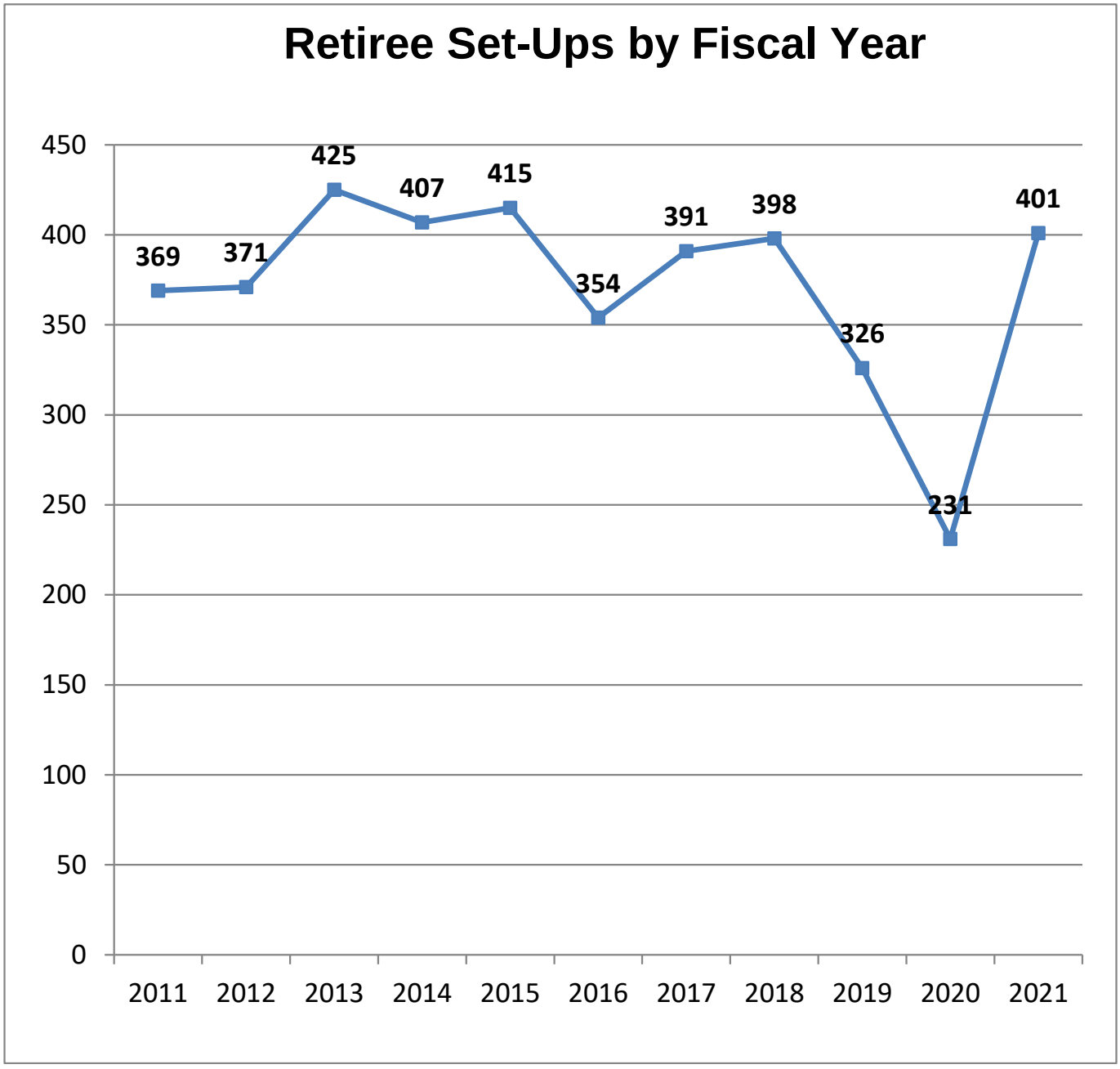





Purchase by Type
80
70
60
50
40
30
20
10
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Fiscal Year
Air Time
Employer
Out of State
Refund
Other

ACTIVE MEMBERSHIP
TIER STATISTICS

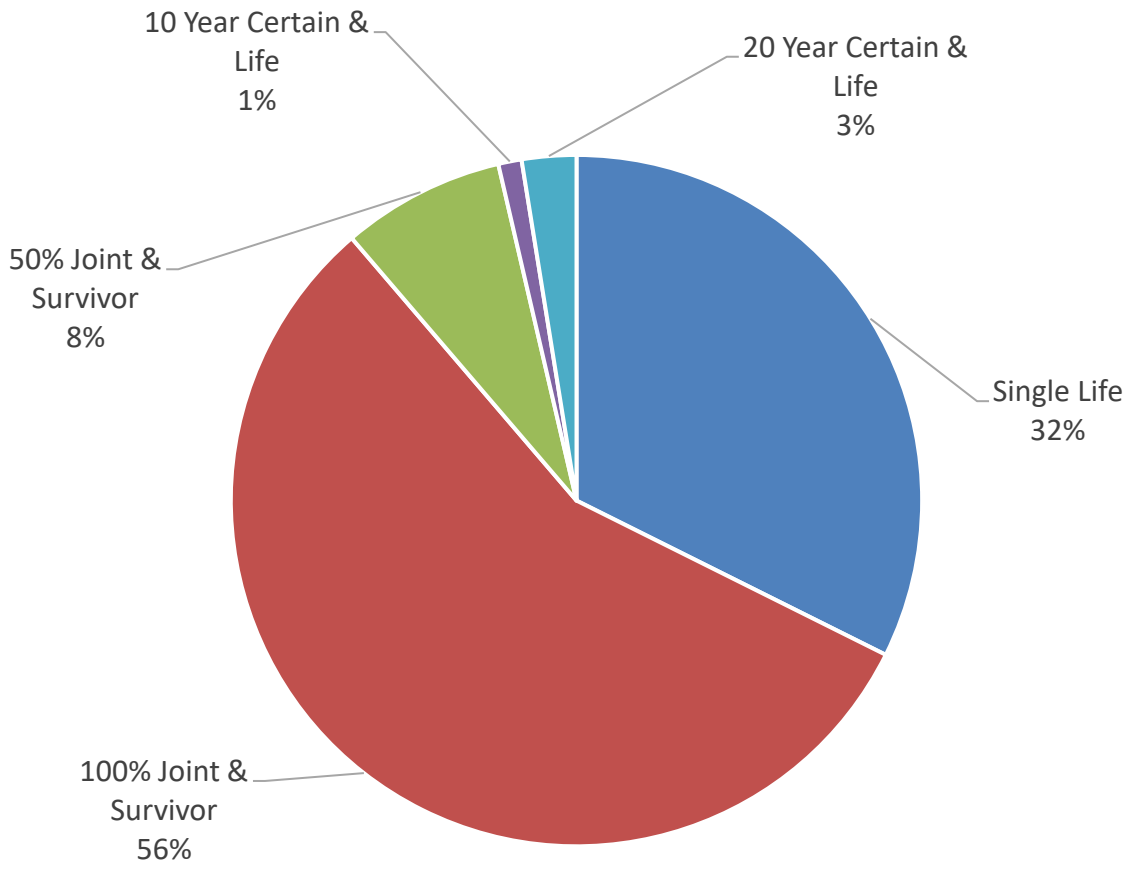



Retiree Set-Ups by Fiscal Year
450
400
350
300
250
200
150
100
50
0
369
371
425
407
415
354
391
398
326
231
401
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021

Service Retirement Options

2020-21

Retirement Option	Number
Single Life	91
100% Joint & Survivor	146
50% Joint & Survivor	26
10 Year Certain & Life	2
20 Year Certain & Life	15
Total	**280**



Note: Of total, 0 members (0%) selected level income option.

Of total, 22 members (8%) selected partial lump sum option.

TFFR Retiree Statistics

Data Selection

- 9,262 retired members and beneficiaries as of July 2021 on data from the valuation file
- Selected various categories of retiree data and grouped data 3 ways

TFFR Retiree Statistics by Fiscal Year

Fiscal Year of Retirement Ending June 30	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
pre-1979	$ 491	$ 7,955	26.1	59.5	87.1	45
1980	$ 621	$ 13,231	28.3	59.0	92.1	7
1981	$ 506	$ 12,025	20.9	57.3	97.2	5
1982	$ 767	$ 21,901	27.9	61.3	92.9	10
1983	$ 421	$ 10,536	21.8	58.5	90.8	5
1984	$ 688	$ 19,921	27.1	61.0	93.7	23
1985	$ 925	$ 25,141	31.6	59.6	90.0	13
1986	$ 933	$ 24,002	30.7	60.6	93.9	36
1987	$ 833	$ 23,629	26.8	59.2	90.6	10
1988	$ 973	$ 25,357	28.0	59.9	91.3	58
1989	$ 1,034	$ 30,018	28.1	59.5	90.3	18
1990	$ 1,097	$ 27,370	29.9	58.7	88.7	131
1991	$ 1,031	$ 28,590	26.5	59.2	87.7	63
1992	$ 1,218	$ 31,635	30.2	58.7	86.3	120
1993	$ 1,087	$ 33,028	25.9	57.2	83.4	50
1994	$ 1,284	$ 32,408	28.4	59.1	86.2	196
1995	$ 1,254	$ 32,863	27.8	58.6	83.4	159
1996	$ 1,288	$ 33,640	27.8	58.3	82.9	133
1997	$ 836	$ 27,441	20.1	58.2	82.3	69
1998	$ 1,510	$ 34,586	29.1	58.8	81.9	289
1999	$ 1,136	$ 33,799	21.6	58.5	80.4	85
2000	$ 1,711	$ 38,160	29.4	58.6	79.8	366
2001	$ 1,393	$ 38,849	23.2	56.9	77.0	74
2002	$ 1,758	$ 39,444	28.5	58.2	77.5	458
2003	$ 1,730	$ 40,513	27.2	58.1	76.2	269
2004	$ 1,770	$ 41,551	27.2	58.1	74.9	333
2005	$ 1,914	$ 43,166	27.7	58.4	74.6	339
2006	$ 1,936	$ 44,743	27.4	58.9	73.5	355
2007	$ 2,119	$ 48,223	28.0	58.6	72.7	332
2008	$ 1,986	$ 46,167	26.4	59.3	72.5	350
2009	$ 2,126	$ 49,330	27.1	59.2	71.3	331
2010	$ 2,149	$ 50,010	26.3	60.5	71.7	328
2011	$ 2,174	$ 50,966	25.8	60.4	70.2	394
2012	$ 2,331	$ 53,828	26.6	60.7	69.8	361
2013	$ 2,627	$ 58,200	27.8	60.5	68.7	452
2014	$ 2,630	$ 59,055	27.7	61.2	68.4	414
2015	$ 2,553	$ 57,887	26.8	61.0	67.1	390
2016	$ 2,837	$ 63,949	26.7	61.5	66.5	404
2017	$ 2,872	$ 64,197	26.8	61.9	65.8	376
2018	$ 2,936	$ 66,599	26.1	61.5	64.6	401
2019	$ 3,058	$ 72,011	25.3	61.7	63.6	364
2020	$ 3,168	$ 71,002	27.0	61.5	62.7	331
2021	$ 3,129	$ 72,062	26.8	61.6	61.8	280
2022	$ 4,841	$ 100,123	30.2	61.6	61.6	35
All FY	**$ 2,172**	**$ 50,130**	**27.2**	**59.9**	**72.7**	**9,262**

TFFR Retiree
Statistics by Formula

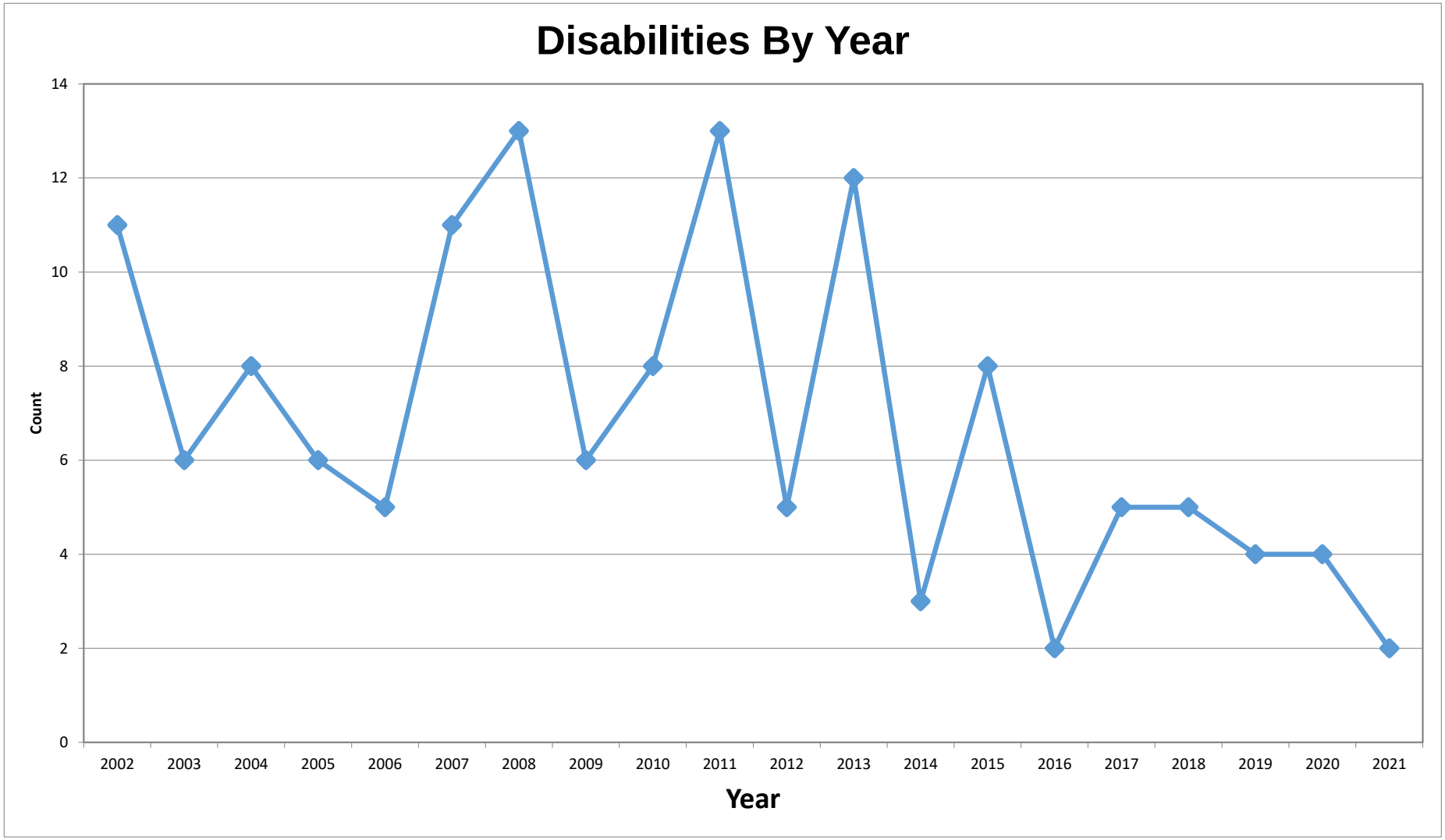
Fiscal Year of Retirement Ending June 30	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
Old formulas	$ 491	$ 7,955	26.1	59.5	87.1	45
1979-1983 or 1.00%	$ 617	$ 15,719	25.6	59.4	93.1	27
1983-1985 or 1.05%	$ 774	$ 21,806	28.7	60.5	92.4	36
1985-1987 or 1.15%	$ 911	$ 23,921	29.8	60.2	93.2	46
1987-1989 or 1.22%	$ 988	$ 26,461	28.0	59.8	91.0	76
1989-1991 or 1.275%	$ 1,076	$ 27,766	28.8	58.9	88.4	194
1991-1993 or 1.39%	$ 1,179	$ 32,045	29.0	58.2	85.5	170
1993-1997 or 1.55%	$ 1,221	$ 32,217	27.1	58.7	84.1	557
1997-1999 or 1.75%	$ 1,425	$ 34,408	27.4	58.8	81.6	374
1999-2001 or 1.88%	$ 1,657	$ 38,276	28.4	58.3	79.4	440
2001-present or 2.00%	$ 2,410	$ 54,973	27.0	60.2	69.6	7,297
All Formulas	**$ 2,172**	**$ 50,130**	**27.2**	**59.9**	**72.7**	**9,262**

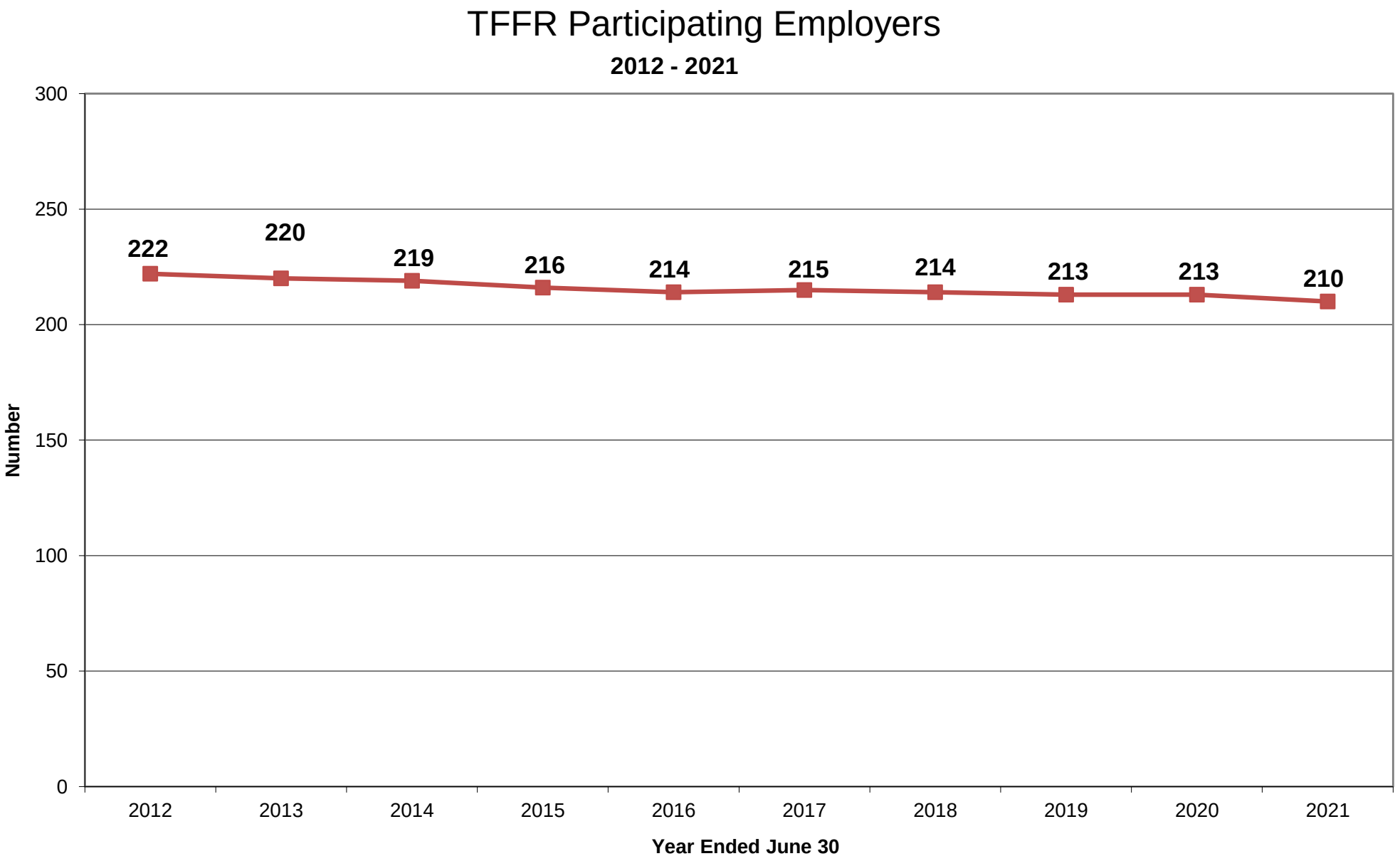
TFFR Retiree Statistics
By Retirement Type

Type	Avg Monthly Pension	Avg Annual Salary	Avg Service Credit	Avg Retirement Age of Member	Avg Current Age of Recipient	Number of Retirees
Death	$ 1,367	$ 39,679	26.8	58.7	75.2	816
Disability	$ 1,255	$ 40,271	15.2	50.6	65.8	125
Early	$ 764	$ 37,664	14.6	60.4	74.2	991
Normal	$ 2,475	$ 53,165	29.2	60.1	72.3	7,300
QDRO	$ 684	$ 48,715	9.6	59.0	69.4	30
All Types	**$ 2,172**	**$ 50,130**	**27.2**	**59.9**	**72.7**	**9,262**

Disability Summary -- 2002 - 2021

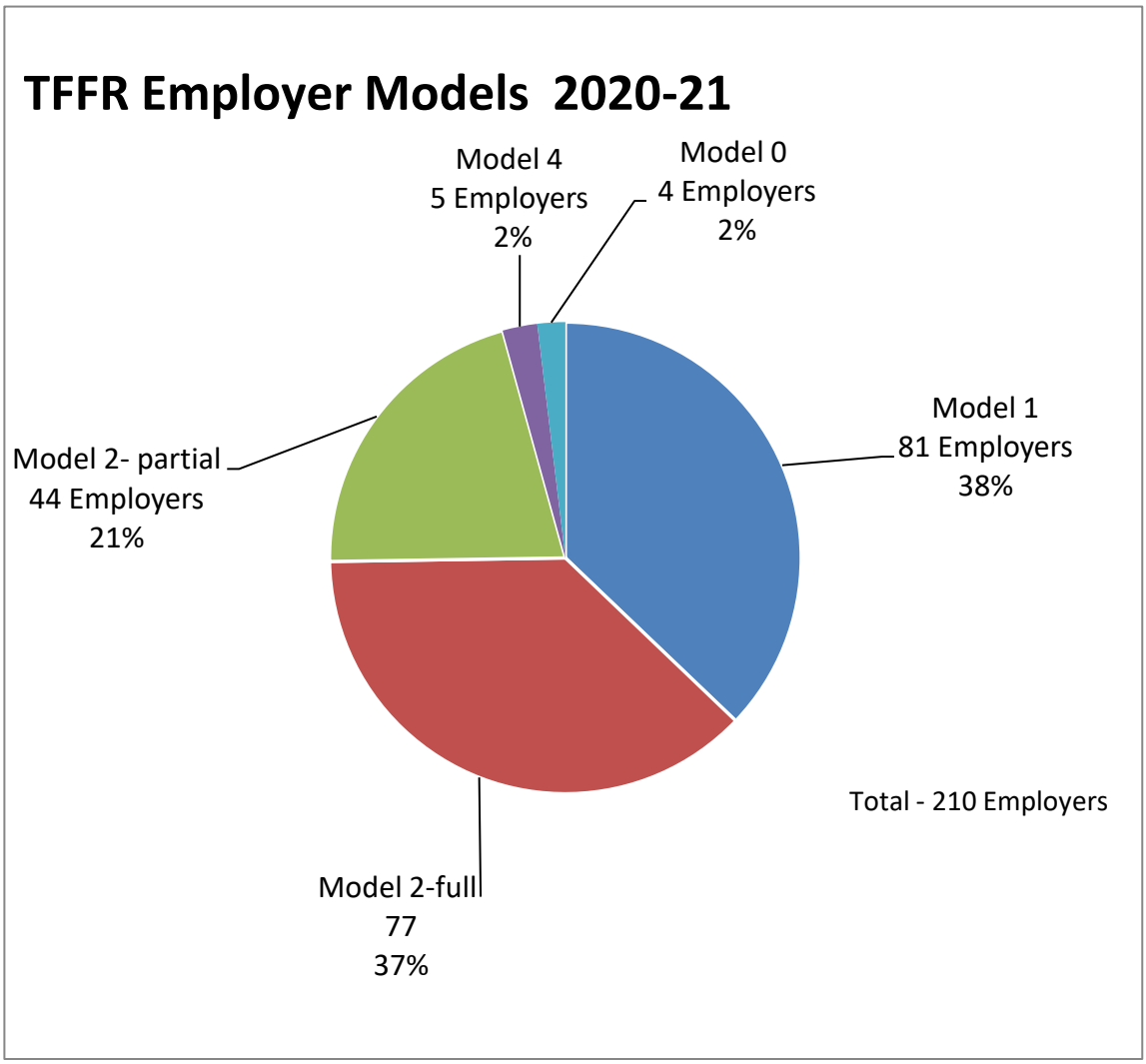
• Total disabilities approved since 2002 - 2021	137
Of 137, number of physical disabilities:	118
Of 137, number of emotional disabilities:	19
• Average number of disabilities approved per year:	7
• Of 137, number that are living and drawing benefits:	92
Of 128, number that are living and returned to work:	3
Of 128, number that are deceased:	42
• Of 137, option selected was:	
Count of Single Life:	84
Count of 100% Joint & Survivor:	37
Count of 50% Joint & Survivor:	11
Count of 5 Year Certain & Life:	0
Count of 10 Year Certain & Life:	1
Count of 20 Year Certain & Life:	4
• Of 92 living and drawing benefits:	
Average service credit in years:	16
Average age in years:	62
Average monthly benefit:	$1,468
Average years benefit was received:	11.2
Number of physical disabilities:	76
Number of emotional disabilities:	16
• Of 3 living and returned to work:	
Average service credit in years:	4.9
Average age in years:	62
Average monthly benefit:	$888
Average years benefit was received:	5.4
Number of physical disabilities:	2
Number of emotional disabilities:	1


Disabilities By Year
Count
14
12
10
8
6
4
2
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Year


TFFR Participating Employers
2012 - 2021
300
250
200
150
100
50
0
Number
222
220
219
216
214
215
214
213
213
210
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Year Ended June 30

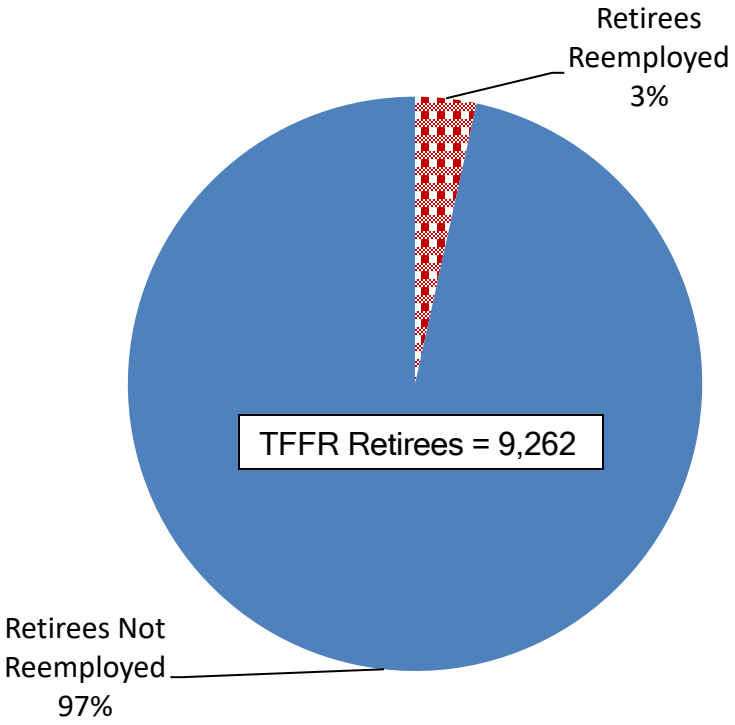
Model Usage 2020-21

	Employers	
Model 1	78	38%
Model 2-full	79	37%
Model 2-partial	44	21%
Model 4	5	2%
Model 0	4	2%
Total	210	100%

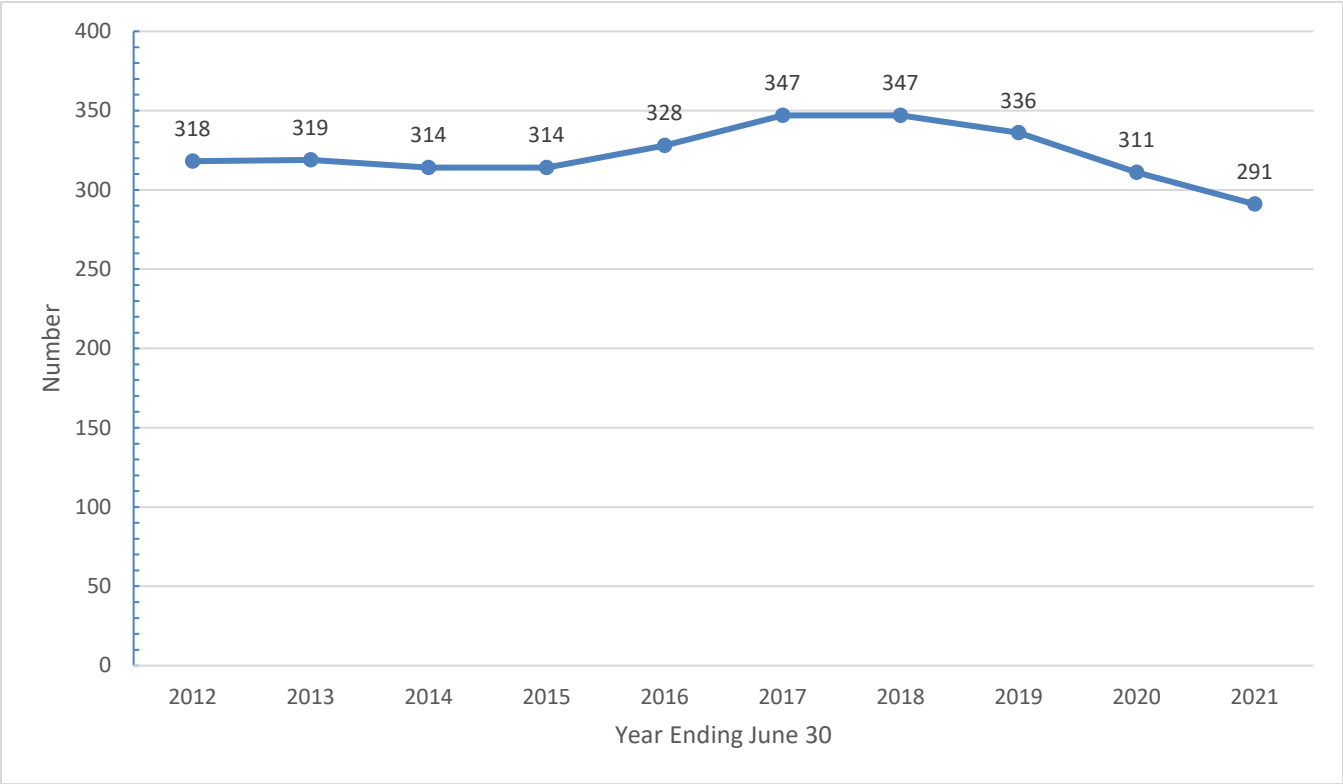


TFFR REEMPLOYED RETIREE REPORT
2020-21

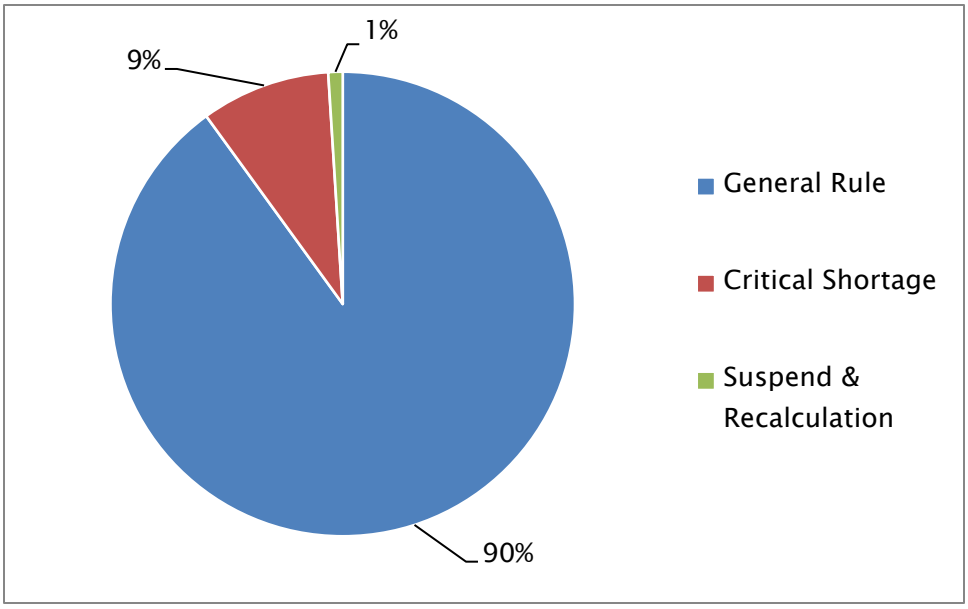
Total number of Reemployed Retirees:	**291**
Superintendents	15
Administrators	13
Teachers	263
General Rule	261
Critical Shortage Area	25
Suspend and Recalculate	5
Average Age	64
Average Salary	$23,589
Total Salaries	$7,264,520
No. Employers w/retirees	114

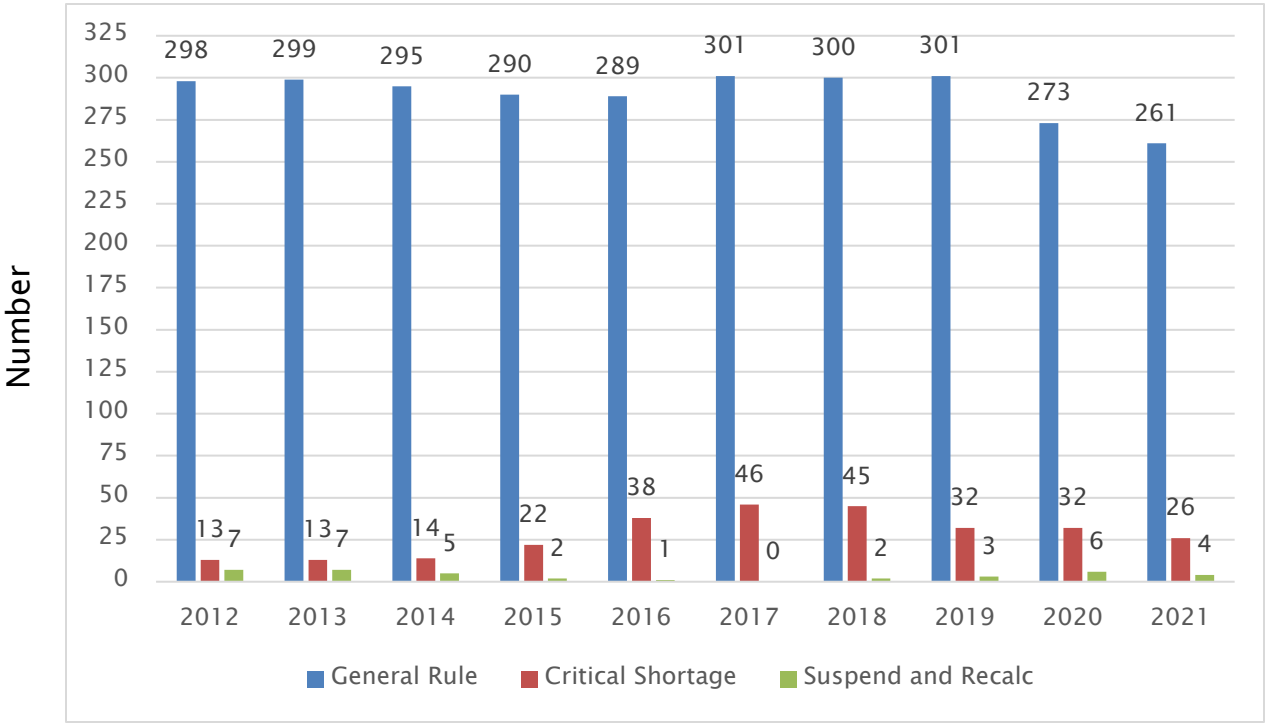


TFFR REEMPLOYED RETIREES
10 YRS. ENDING 6-30-21



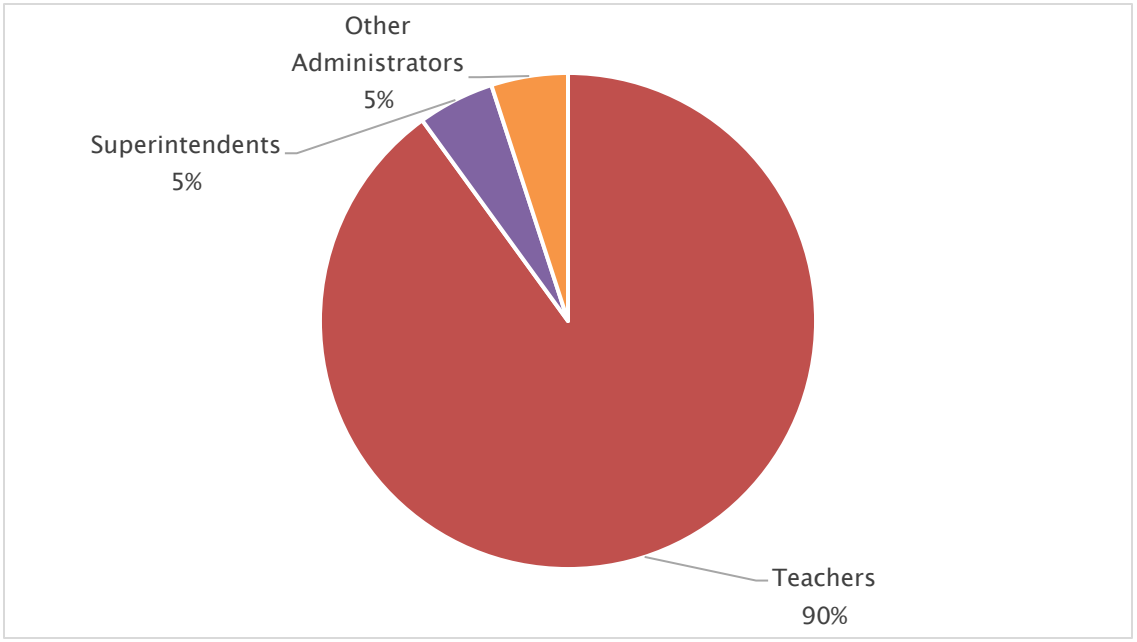
TFFR RE-EMPLOYED RETIREES BY OPTION
2020-21

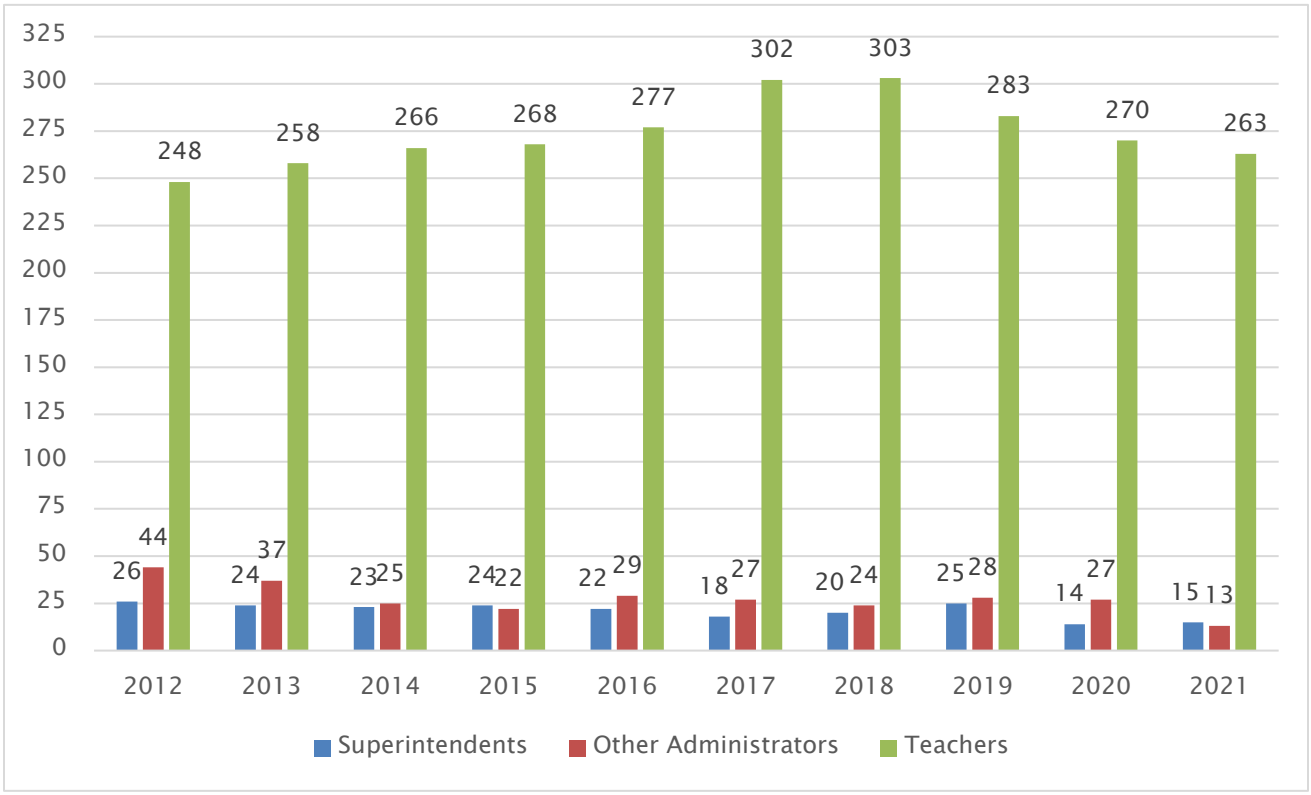




Year Ending June 30

TFFR RE-EMPLOYED RETIREES BY JOB TYPE
2020-21





TFFR REEMPLOYED RETIREES

BY SUBJECT/POSITION

2020-21

Subject or Position	Re-Employed Retirees		
	Full Time CSA/SR	Part Time Gen Rule	Total
Art	0	1	1
Business	1	5	6
Counseling	0	13	13
Elementary Ed	3	18	21
English/Reading	6	10	16
Extra-Curricular	0	47	47
FACS	1	1	2
Foreign Language	0	2	2
Health/Phy Ed	0	3	3
Library/Media	1	4	5
Math	1	7	8
Mentors, Strategists, Prof. Dev.	0	11	11
Music	1	5	6
Science	3	10	13
Social Studies/History	2	5	7
Special Ed/Title/LD/Speech *	6	44	50
Summer School/Driver's Ed	0	25	25
Tech Coordination/Tech Ed	0	5	5
Voc Ed/Adult Ed	2	5	7
Other Teachers	1	14	15
Total Retired Teachers	28	235	263

Superintendent	0	15	15
Other Admin (Principle, Asst. Supt, Director, Coordinator)	2	13	15
Total Retired Administrators	2	28	30
Total Reemployed Retirees	30	263	293

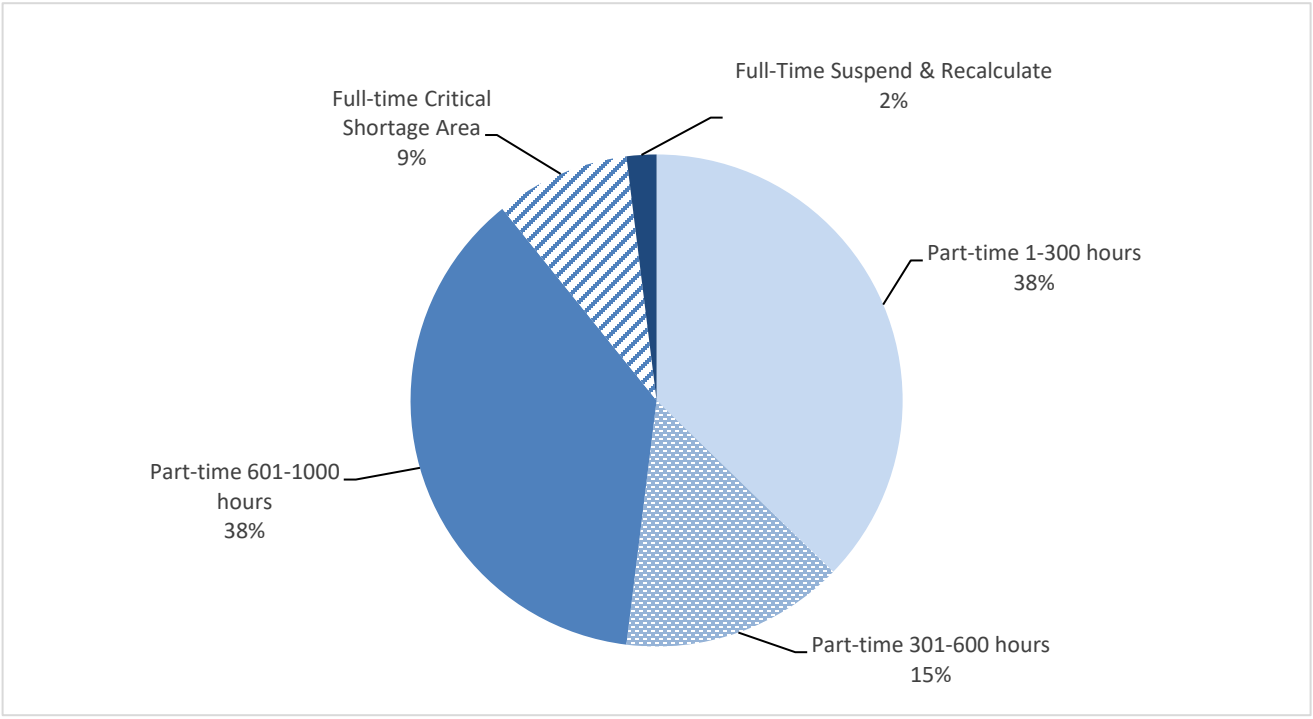
(9 teaching in 2 school districts & 2 teaching in 3 school districts)

*Special Ed	
LD	4
Speech Path/Ther	6
Spec Ed	20
Title	9
Hearing Impair	0
Spec Ed Dir & Coor	11

CSA = Critical Shortage Area

SR = Suspend & Recalc

TFFR REEMPLOYED RETIREES BY HOURS CONTRACTED
2020-21



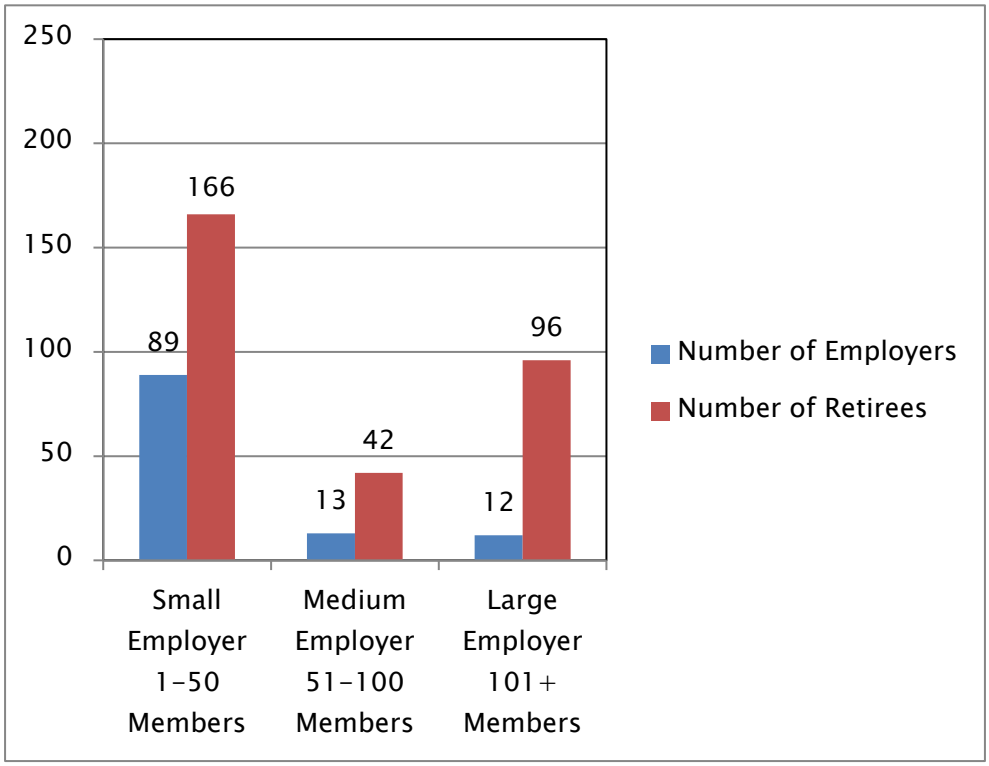
Hours Contracted	Reemployed Retirees	
Part Time – General Rule	**Number**	**Percent**
1 – 300 hours	110	38%
301 – 600 hours	44	15%
601 – 1000 hours	107	36%
Full Time		
Critical Shortage Area	25	9%
Suspend & Recalculate	5	2%
Total Reemployed Retirees	**291**	**100%**
(9 teaching in 2 districts)		
(2 teaching in 3 districts)		

TFFR RE-EMPLOYED RETIREES
BY EMPLOYER
2020-21

School Districts	#	School Districts	#	School Districts	#
Alexander		Glenburn	1	Midkota	2
Anamoose		Goodrich	2	Midway	1
Apple Creek Elementary		Grafton	3	Milnor	
Ashley		Grand Forks	20	Minnewauken	2
Bakker Elementary		Grenora		Minot	2
Barnes County North		Griggs County Central	3	Minto	
Beach		Halliday	1	Mohall-Lansford-Sherwood	
Belcourt	1	Hankinson		Montpelier	2
Belfield	1	Harvey	1	Mott-Regent	
Beulah	3	Hatton Eielson	1	Mt. Pleasant	
Billings County School	2	Hazelton-Moffit		Munich	2
Bismarck	13	Hazen	2	Napoleon	2
Bottineau	2	Hebron	2	Naughton Rural	2
Bowbells		Hettinger		Nedrose	
Bowman		Hillsboro	4	Nesson	3
Burke Central		Hope		New England	2
Carrington	1	Horse Creek Elementary		New Rockford-Sheyenne	
Cavalier	3	Jamestown	3	New Salem-Almont	2
Center-Stanton		Kenmare		New Town	3
Central Cass	1	Kensal	3	Newburg United	1
Central Valley		Kidder County School Dist.		North Border School	6
Dakota Prairie		Killdeer	1	North Sargent	
Devils Lake	2	Kindred	4	North Star-Cando	5
Dickinson	7	Kulm		Northern Cass	
Divide County		Lakota		Northwood	
Drake		LaMoure	4	Oakes	
Drayton	5	Langdon	2	Oberon Elementary	
Dunseith	3	Larimore	2	Page	
Earl Elementary		Leeds	1	Park River	3
Edgeley		Lewis and Clark	2	Parshall	
Edmore		Lidgerwood		Pingree-Buchanan	3
Eight Mile		Linton	1	Powers Lake	1
Elgin/New Leipzig	1	Lisbon	1	Richardton-Taylor	2
Ellendale		Litchville-Marion		Richland	
Emerado Elementary		Little Heart Elementary		Rolette	3
Enderlin Area School		Lone Tree Elementary	1	Roosevelt-Carson	1
Fairmount		Maddock	1	Rugby	4
Fargo	24	Mandan	6	Sargent Central	
Fessenden-Bowdon		Mandaree	2	Sawyer	
Finley-Sharon		Manning Elementary		Scranton	2
Flasher		Manvel Elementary	1	Selfridge	1
Fordville Lankin		Maple Valley		Solen-Canonball	2
Fort Ransom Elementary	1	Mapleton Elementary		South Heart	
Fort Totten	4	Marmarth Elementary	1	South Prairie	2
Fort Yates	1	Max		St. John's School	2
Gackle-Streeter	1	Mayville-Portland CG	2	St. Thomas	5
Garrison		McClusky	2	Stanley	
Glen Ullin		McKenzie County School Dist			
		Medina			
		Menoken Elementary			

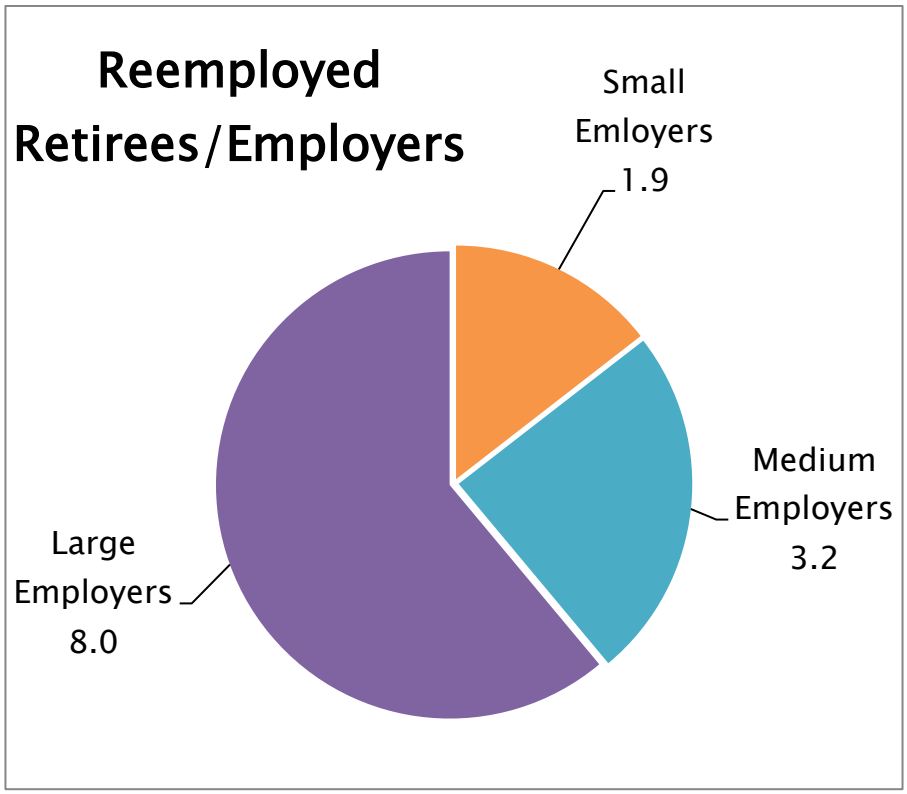
School Districts (cont)	#	Special Education Units	#	Other	#
Starkweather		Burleigh County Special Ed	1	Great NW Education Co-op	2
Sterling Elementary		East Central Special Ed		ND United	
Strasburg	1	GST Educational	1	Rough Rider Ed Services	2
Surrey	2	James River Special Ed	1	South East Education Co-op	3
Sweet Briar Elementary		Lake Region Special Ed			
TGU		Lonetree Special Ed	1		
Thompson	1	Northern Plains Special Ed			
Tioga		Oliver-Mercer Special Ed			
Turtle Lake-Mercer	3	Peace Garden Special Ed	2		
Twin Buttes Elementary		Pembina Special Ed		**Total TFFR Participating Employers**	**210**
Underwood	2	Rural Cass County Special Ed	1		
United		Sheyenne Valley Special Ed	1		
Valley-Edinburg	4	Souris Valley Special Ed			
Valley City	1	South Central Prairie Sp Ed	1	**114 Employers Employing TFFR Retirees (60%)**	
Velva	1	South Valley Special Ed			
Wahpeton		Southwest Special Ed			
Warwick	2	Upper Valley Special Ed	2		
Washburn	1	West River Student Services	1	**291 TFFR Retirees Employed (9 retirees working in 2 school districts and 2 working in 3 school districts)**	
West Fargo	11	Wil-Mac Special Ed	5		
Westhope					
White Shield	2				
Williams Co School Dist					
Williston	4				
Wilton		**Vocational Centers**			
Wing		N Central Area Career & Tech			
Wishek	1	N Valley Career & Tech Ctr	1		
Wolford		Roughrider Area Career/Tech	1		
Wyndmere	2	SE Region Career & Tech Ctr			
Yellowstone		Sheyenne Valley Area Voc Ctr			
Zeeland					
		CREA	2		
County Superintendents		**State Agencies & Institutions**			
Logan County		ND Center for Distance Ed	8		
McKenzie County		ND Dept of Public Instruction			
Morton County	1	ND School for the Blind			
Nelson County		ND School for the Deaf	1		
Slope County		ND Youth Correctional Center	1		
Ward County					

TFFR REEMPLOYED RETIREES BY EMPLOYER SIZE
2020-21



Empl Size	All Empl.	Empl w/ Re-empl Retirees	
Small	179	89	42%
Medium	17	13	6%
Large	14	12	6%
Total	210	114	54%

Employer Size	Re-empl Retirees	
Small	166	55%
Medium	42	14%
Large	96	31%
Total	304	100%



291 Retirees employed by 114 employers
(9 retirees working in 2 districts)
(2 retirees working in 3 districts)

Average All = 2.7 retirees/employer

NORTH Dakota | Retirement and Investment
Be Legendary.

MEMORANDUM

TO: **State Investment Board**
FROM: **Jan Murtha, Executive Director**
DATE: **January 25, 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. **Facility Move:** RIO has successfully moved to its new location at the WSI Building. RIO is in the process of updating all communication methods to reflect both the new address and new branding logos previously developed by Dept. of Commerce.

2. **Staff Engagement:** As part of its commitment to team member professional development and in partnership with WSI, all RIO team members have or are scheduled to participate in Crucial Conversations training in 2022.

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

Employee Title	**Status**
Executive Director	Filled 11/21
Chief Investment Officer	Filled 01/22
Deputy ED – Chief Retirement Officer	Anticipated posting week of 1/24/22
Chief Risk Officer	Start date 1/31/22
Contracts/Records Admin	Filled 11/21
Retirement Program Admin	Filled 11/21
Front Desk Temp	Filled 10/21
Membership Specialist Temp	Started 10/18/21; reposted in 11/21 and 1/22. Interviews 2/22.
Employer Reporting Intern	Start date 2/7/22
Investment #1	Authorized by HB 1506 in 2021 Legislative Special Session: staff is creating JDQ's
Investment #2	Authorized by HB 1506 in 2021 Legislative Special Session: staff is creating JDQ's
Investment #3	Authorized by HB 1506 in 2021 Legislative Special Session: staff is creating JDQ's
Investment #4	Authorized by HB 1506 in 2021 Legislative Special Session: staff is creating JDQ's
Accounting #1	Authorized by HB 1506 in 2021 Legislative Special Session: staff is creating JDQ's
Programs Coordinator	Authorized by HB 1506 in 2021 Legislative Special Session: staff is creating JDQ's

4. **Current Procurement Activities including:**

- **PAS Project** – We anticipate the contract negotiating phase to complete within February 2022. The ESC may issue a notice of award at the conclusion of contract negotiations and Phase 3 (final phase) will initiate.
- **Legacy Fund Advisory Board Consultant RFP** – The consultant for the Legacy Fund Advisory Board RFP was issued in January 2022. Finalists may be presented to the Advisory Board the week of February 14, 2022.

5. **Strategic Planning**: RIO is undertaking the development of a comprehensive strategic plan by partnering with other state agencies who are leading such efforts. RIO has accepted an invitation to participate in a strategic planning project with ITD, the first meeting is scheduled for January 31, 2022. RIO is also collaborating with HRMS for the strategic planning of staffing needs. Further, WSI has also offered to provide strategic planning guidance and assistance.

BOARD ACTION REQUESTED: Board Acceptance.

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ND TFFR Board
Education Materials
January 2022

The theme for January Education materials is the value of defined benefit retirement plans in employee retention.

Attached for your reference is a January 2022 report published by the National Institute on Retirement Security that discusses the difference in value between Defined Benefit and Defined Contribution Plans.

Further, please see results from a survey conducted by ND United regarding K-12 teacher satisfaction in North Dakota.

https://www.ndunited.org/articles/crushing-workloads-stagnant-pay-political-interference-push-nd-educators-to-consider-leaving-jobs-at-alarming-rate/?utm_campaign=coschedule

A BETTER BANG FOR THE BUCK 3.0

POST-RETIREMENT EXPERIENCE DRIVES PENSION COST ADVANTAGE

By William B. Fornia, FSA and Dan Doonan

January 2022

NATIONAL INSTITUTE ON
Retirement Security
Reliable Research. Sensible Solutions.

ABOUT THE AUTHORS

William B. Fornia, FSA founded Pension Trustee Advisors in 2010 and serves as president. PTA provides consulting services on retirement benefits to eighty clients. Previously, he led the public sector retirement plan actuarial consulting practice of a major consulting firm. His forty-year professional expertise is the analysis, design and modeling of postretirement employee benefits (pensions and health), particularly in the public sector. He has consulted with numerous state and local government bodies regarding their public retirement systems, as well as with private sector and not-for-profit employers in the United States, Brazil and Argentina. He has also worked on federal, state and local compliance and accounting issues for many clients. A frequent speaker, Mr. Fornia has testified before legislative and judicial bodies in seventeen states, and served as expert witness, having testified in Federal Court. Mr. Fornia has published several papers on retirement and has been interviewed by various periodicals. His most cited paper is NIRS' "A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pensions." He has served public sector clients in thirty-seven states, Guam and Puerto Rico, and has consulted on seven of the ten largest US cities. Mr. Fornia is on the faculty of Board Smart, an online pension training platform. He is a Fellow of the Society of Actuaries (1986), where he was reelected by its 35,000 membership to its Board of Directors. Mr. Fornia is an Enrolled Actuary under ERISA (1984), a Member of the American Academy of Actuaries (1983), and Fellow of the Conference of Consulting Actuaries (2005). He graduated from Whitman College with a Bachelor of Arts degree in Mathematics (1980).

Dan Doonan is the executive director of the National Institute on Retirement Security. With the Board of Directors, Doonan leads the organization's strategic planning, retirement research and education initiatives. Doonan has more than 20 years of experience working on retirement issues from different vantage points including an analyst, consultant, trainer, and a plan trustee. He comes to NIRS after serving as a senior pension specialist with the National Education Association. Doonan began his career at the Department of Labor as a mathematical statistician. He then spent seven years performing actuarial analysis with Buck Consultants in the retirement practice. His experience also includes positions as a research director and labor economist. Doonan holds a B.S. in Mathematics from Elizabethtown College and is a member of the National Academy of Social Insurance.

ACKNOWLEDGEMENTS

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I. INTRODUCTION

Over the past four decades, private employers have shifted away from defined benefit (DB) pensions that provide employees with a steady retirement income stream. Instead, many private sector employers have moved towards defined contribution (DC) retirement accounts—such as 401(k) plans—citing costs. Under DC accounts, individual workers manage their own investments and bear all the risks. Many public sector employers faced pressure following the 2008 financial crisis to make a similar change.

Whether this transition meant that employer costs were reduced (or simply shifted to workers along with the risks), it wasn't the result of DC retirement accounts being less costly than a DB pension per dollar of benefit. In fact, DB pensions continue to have substantial economic efficiencies that cannot be replicated by individual DC accounts. Switching from a DB to a DC system saves money only if it involves substantial cuts to employee benefits.

Public sector employers largely have retained DB pensions as the primary retirement plan to ensure state and local workers have a modest but secure retirement. However, because of the concerns over the plans' long-term sustainability, nearly every state and local government in recent years has made significant changes to their DB plans, such as requiring higher employee contributions and increasing retirement ages. At the same time, the DC industry has been working on strategies that seek to close the gap on the advantages that DB plan participants benefit from—like longevity pooling, more competitive investment management fees, and lifetime income.

In fact, DB pensions feature critical efficiencies that make them significantly less expensive to provide a given level of retirement benefit compared to DC plans. These cost savings were documented by the 2008 National Institute on Retirement Security (NIRS) study, "A Better Bang for the Buck: The Economic Efficiencies of Defined Benefit Pensions" and a 2014 follow-up study, "Still a Better Bang for the Buck: an Update on the Economic Efficiencies of Defined Benefit Pensions."[1] These studies found that a typical large DB pension plan provides a given level of retirement benefit at about half the cost of a 401(k)-style plan, because of three factors:

- **Longevity risk pooling.** The pooling of longevity risk in DB pensions enables them to fund benefits based on average life expectancy, and yet pay each worker monthly income no matter how long they live. In contrast, DC plans must receive excess contributions to enable each worker to self-insure against the possibility of living longer than average.

- **Higher investment returns.** DB pensions realize higher net investment returns due to professional management and lower fees from economies of scale

- **Optimally balanced investment portfolios.** DB pensions are "ageless" and therefore can perpetually maintain an optimally balanced investment portfolio rather than the typical individual strategy of down-shifting over time to a lower risk/return asset allocation. This means that over a lifetime, DB pensions earn higher investment returns as compared to DC accounts.

In summary, when it comes to providing retirement income, DB pensions are substantially more economically efficient than individual retirement accounts because of risk pooling across a large number of individuals, a longer investment time horizon, and lower expenses and higher returns.

These facts have not fundamentally changed from the previous two studies. This report updates the comparison of retirement benefit funding costs based on an enhanced methodology that takes into account key changes in the DB and DC plan landscapes with regard to investment strategies and fees. A notable change includes the development of different assumptions for pre- and post-retirement years in DC plans, because DC plans generally have been successful at lowering costs for participants during their working years. However, costs and returns continue to lag dramatically during the post-retirement period.

This study, as in the 2014 update, compares:

1. A typical large public sector DB pension to two kinds of DC plans;

2. An "ideal" DC plan with a typical target date fund (TDF) asset allocation pattern, fees below industry average,

and asset class investment performance as strong as that managed by professionals; and

3. An individually directed DC plan with industry average fees and reduced investment returns based on typical individual investor behavior.

All three plans—the typical DB plan, the ideal DC plan, and the individually directed DC plan—are modeled with the same underlying demographic and economic assumptions regarding employee wage growth, retirement age, life expectancy, target monthly retirement income, inflation, and projected rates of return for each asset class. This new analysis also assumes that all plans receive consistent, adequate contributions required to fund target benefits.

This study contains two new elements that were not included in the previous studies. First, it considers the impact on all three plans if the current low interest rate environment continues and compares that to a baseline scenario. Second, it analyzes how costs are affected by beginning to save mid-career rather than early career, and how that late start reduces total savings at retirement.

Even with updated assumptions and methodology, DB pensions still offer substantial cost advantage over DC plans. The analysis finds:

- A typical DB plan, with advantages based on longevity risk pooling, asset allocation, low fees and professional management, has a 49 percent cost advantage compared to a typical individually directed DC plan:
    - The longevity risk pooling that occurs in the DB plan accounts for 7 percent cost savings;
    - The DB plan's ability to maintain a more diversified portfolio drives another 12 percent cost savings;
    - Superior net investment returns, due to lower fees and professional management, generate an additional 30 percent reduction in cost.
- A DB pension costs 27 percent less than an "ideal" DC plan with below-average fees and no individual investor deficiencies.
- Roughly four-fifths of the difference in costs between the DB plan and the individually directed DC plan occurs during the post-retirement period, as retirees move from an environment that benefits from a long investment horizon and fiduciary protections to one where they manage their spend-down on a short-term individual basis without the benefits associated with longevity-risk pooling.

In other words, a typical DC plan costs nearly twice as much to provide the same level of retirement benefit as a DB plan, with four-fifths of the difference occurring post-retirement.

Specifically, it would be 96 percent and 37 percent more expensive for a typical DC plan and an ideal DC plan, respectively, to deliver the same level of retirement income as a typical DB plan. Thus, DB pensions continue to offer significant cost advantage. While shifting from a DB pension to a DC plan offers a way to reduce the investment risk borne by employers and taxpayers, this comes with an unavoidable tradeoff—either increased benefit costs or, more likely, significant retirement benefit cuts that are larger than the savings realized by the employer.

II. DEFINED BENEFIT AND DEFINED CONTRIBUTION PLANS

Employers who offer retirement benefits generally consider two basic approaches: a traditional defined benefit (DB) pension plan and a defined contribution (DC) retirement savings plan. The DB plan is designed to provide predictable retirement *income* throughout a worker's retirement years. Assets are pooled, and investments are managed by professionals who are responsible for acting in the best interest of participants. The DC plan, in contrast, is focused on accumulating retirement *wealth* expressed as a lump sum, with individual participants ultimately responsible for garnering adequate investment returns and managing their own accumulated wealth throughout their retirement years. This would entail estimating how much they can safely withdraw each year of retirement without running out of money, attempting to evaluate the best annuitization alternative in the open market, or some combination of the two.

Each type of plan has certain distinguishing characteristics that influence its cost to employers and employees.

How DB Plans Work

While employers have a large degree of flexibility in designing the features of a DB plan, there are some features all DB plans share. DB plans are designed to provide employees with a predictable monthly benefit in retirement. The amount of the monthly pension is typically a function of the number of years an employee devotes to the job and the worker's pay—usually at the end of their career.[2] For example, the plan might provide a benefit in the amount of 1.5 percent of final average pay for each year worked. Thus, a worker whose final average salary was $50,000, and who had devoted 30 years to the job, would earn a monthly benefit of $1,875 ($22,500 per year), a sum that would "replace" 45 percent of their final average salary after they stop working. This plan design is attractive to employees because of the security it provides. Employees know in advance of making the decision to retire that they will have a steady, predictable income that will enable them to maintain a fairly stable portion of their pre-retirement standard of living.[3]

Benefits in DB plans are pre-funded. That is, employers (and, in the public sector, most employees) make contributions to a common pension trust fund over the course of a worker's career. These funds are invested by professional asset managers whose activities are overseen by trustees and other fiduciaries. A typical DB pension fund's asset allocation policy—i.e., the share of holdings allotted to different asset classes such as stock, bonds, and treasuries—is based on a careful analysis of plan demographics and liabilities as well as short- and long-term financial market projections.[4] The earnings that build up in the fund, along with the dollars initially contributed, pay for the lifetime benefits a worker receives at retirement.

How DC Plans Work

DC plans function very differently than DB plans. First, there is no promise of retirement income in a DC plan. Rather, the level of retirement income that an account will provide depends on a number of factors, such as the level of employer and employee contributions to the plan, the investment returns earned on assets, whether loans are taken or funds are withdrawn prior to retirement, and the individual's lifespan.

While DC plan assets also are held in a trust, that trust is comprised of a large number of individual accounts. DC plans are typically "participant directed," meaning that each individual employee can decide how much to save, how to invest the funds in the account, how to modify these investments over time, and how to withdraw the funds during retirement.

Retirement experts typically advise individuals in DC plans to change their investment patterns over their lifecycle. In other words, at younger ages, because retirement is a long way off, workers should allocate more funds to stocks, which have higher expected returns but also higher risks. As one gets closer to retirement, experts suggest moving money away from stocks and into safer but lower return assets like bonds. This is to guard against a large drop in retirement savings on the eve of retirement, or in one's retirement years.

The high degree of participant direction makes DC plans very flexible in accommodating individuals' desires, decisions, and control. Unfortunately, a substantial body of empirical and experimental research indicates that this flexibility tends to lead to adverse outcomes. First, too many workers fail to contribute sufficient amounts to the plans.[5] Second, individuals' lack of expertise in making investment

decisions can subject individual accounts to extremely unbalanced portfolios with too little or too much invested in one particular asset, such as stocks, bonds, or cash.[6] One team of researchers thus concluded, "The likelihood of investment success increases as the participant's involvement in investment decisions decreases."[7]

Fortunately, the DC industry recognizes these dynamics and has been moving toward offering default investment products where no decision is a good decision, such as Target Date Funds (TDFs) or Lifetime Funds. In addition, legislation has increased the acceptable default contribution levels to be more realistic in terms of what a typical retirement would cost.

Another important difference between DB and DC plans becomes apparent at retirement. Unlike in DB plans, where workers receive regular monthly pension payments, in DC plans it is typically left to the retiree to decide how to spend their retirement savings. Research suggests that many individuals struggle with this task, either drawing down funds too quickly and running out of money, or holding on to funds too tightly and enjoying a lower standard of living as a result. In theory, employers that offer DC plans could provide annuity payout options, but in practice they rarely do.[8]

The Changing Retirement Benefit Landscape

Changing Asset Allocation and Risk Management Strategies among DB Pension Funds

Changes in the financial and regulatory environments for DB pensions during the past several decades have prompted funds to shift financial risk management strategies. Notably, while governmental and corporate DB pension funds had similar asset allocations until 2008, including the share of investments in equities, different regulatory and demographic considerations led to diverging asset allocation after 2008. Given this divergence, and the concentration of DB pension benefits and assets in the governmental sector, this study models a typical public pension's asset allocation.

In the private sector, corporations began introducing 401(k) plans in the 1980s. Then in the early 21st century, many firms began to close or freeze existing DB pension plans. The long bull market in stocks from the 1980s to 2000 enabled corporate pension sponsors to maintain pension plans with little or no cash contributions and use their overfunded pensions as a source of income. Plan costs increased after the financial bubble burst. Then after the passage of the Pension Protection Act of 2006, private employers faced more onerous pension funding rules. While the intention was to safeguard retirement benefits promised to private sector workers, these regulations made pension funding and reported liabilities more volatile, and contributed to additional DB pension plan freezes and terminations.[9] Other accounting and regulatory actions over the decades have added to this trend.

With no new workers entering the system, closed corporate pension plans face a shorter investment horizon. This dynamic, combined with the pension expense volatility created by new funding and accounting rules, motivated corporate DB pension sponsors to de-risk their portfolios by purchasing expensive annuities through third parties instead of continuing to invest in stocks, bonds, and other typical DB investment classes.[10]

Public pension plans, in particular state and local government pensions, faced unprecedented challenges in the aftermath of the 2008 financial crisis. Almost every state legislature enacted plan changes to enhance sustainability, and most included measures to increase employee contributions and reduce benefits for at least some employees.[11] Very few of these changes included eliminating the core DB plan, though some added combination plans that featured both DB and DC plans, or offered a choice.

Particularly germane to this study are the investment policy decisions made by many public pension funds. First, in response to a desire for reduced volatility and the low interest rate environment, pension fund trustees have reduced plan exposure to US stocks and traditional fixed income securities, and further diversified funds by increasing the share of global stocks and alternative investments such as real estate, private equity, and commodities. Second, the changing financial landscape also has prompted public pension funds to lower their rate of return assumptions. The median investment return assumption dropped from 8.00 percent in 2011 to 7.75 percent in 2014 and 7.00 percent in 2021 (net of expenses).[12]

Efforts to Improve DC Plans

The DC landscape has changed as well. Experts and policymakers have focused on addressing key problems in 401(k) type plans related to fees, investment options, investor behavior, and retirement income outcomes.

First, investment fees within employer-provided plans have been cut by half since 2000. In addition to competitive pressures, the fees have been reduced due to increased regulatory scrutiny of 401(k) and IRA fees, and growing use of lower cost index funds.[13] The U.S. Department of Labor issued regulations in 2010 and 2012 concerning the disclosure of 401(k) fees. According to the Investment Company Institute, the asset-weighted average equity mutual fund expense ratio declined from 99 basis points in 2000 to 50 basis points in 2020.[14]

Annuities have continued to garner increasing interest among policymakers and regulators as a means to convert DC account balances into a lifetime income stream. Individual investment accounts are framed in terms of lump-sum retirement *wealth*, while the challenge facing retirees is securing adequate *income* to last through their lifetime. Annuities are financial products in which a third party (typically an insurance company) promises a stream of income in return for a lump sum. Despite the interest among legislators and plan providers, the availability of annuities as a 401(k) payout option remains limited, and overall participation rates remain low. They tend to be expensive due to today's low interest environment, insurer profit objectives, marketing and administrative costs, and adverse selection. But, as demonstrated by the results of this analysis, the greatest potential for improving the DC plan experience for participants lies in figuring out a safe and economically efficient means of generating post-retirement income. Provisions in the SECURE Act provided more legal protections to plans offering lifetime income options within 401(k) plans, and Section 203 of the SECURE Act will require DC plans to provide members with information about what level of income they might expect from their savings, helping individuals better understand this complex issue.

Growing use of target asset allocation funds. The consensus resulting from a decade of behavioral finance research is that 401(k) participants routinely make asset allocation and investment mistakes, such as buying and selling holdings at the wrong time, failing to regularly rebalance their portfolios, or taking too little or too much risk in their asset allocation. Target asset allocation funds address part of this problem through automatic rebalancing. One such type of fund, called Target Date Funds (TDFs) or lifecycle funds, has gained favor among policymakers, retirement experts, and large employers in the US and has continued to see broader use among DC plans.[15] TDFs gradually and automatically shift their asset allocation from risky stocks to less risky bonds as a worker ages, based on their target retirement year. TDFs were held by 56 percent of 401(k) participants in 2018 and by 62 percent of participants in their 20's. In total, 27 percent of 401(k) assets were held in TDFs at the end of 2018.[16] These funds now account for the largest share of new 401(k) contributions. While they are not a panacea for individual investor error, the investment behavioral gap is much lower among individuals investing in TDFs compared to most other types of funds.[17]

A Note on Hybrid Retirement Benefits

There is ongoing interest in "hybrid" retirement benefits that combine some of the features of DB and DC plans, and offload some risks onto employees while maintaining some of the retirement security offered by traditional DB pensions. There are three main approaches to maintaining a DB but reducing cost volatility: risk-sharing DB plans, Cash Balance (CB) plans, and combination DB/DC plans, as described in *The Hybrid Handbook*.[18] A CB plan is legally a DB plan—benefits are guaranteed, albeit as a lump sum, and assets are pooled in a trust and managed professionally. However, CB plan benefits typically are less generous than a traditional DB pension and too often participants do not obtain longevity protection when choosing a lump sum.

Importantly, the relative costs of hybrid plans depend largely on benefit structure. To the extent that hybrid benefits emphasize DB-like characteristics, they remain more cost effective depending on how plan types are combined.

III. METHODOLOGY

This study compares the relative costs of DB plans and DC accounts by constructing a model that first calculates the cost of achieving a target retirement benefit in a typical public sector DB plan. This includes calculating this cost as a level percent of payroll over a career, then calculating the cost of providing the same retirement benefit under two different types of DC plans—an "ideal" DC plan modeled with generous assumptions and a typical individually directed DC plan. Additional details on the methodology that account for the impact of alternative economic and demographic assumptions can be found in the Technical Appendix to this report.

Demographic Assumptions

The model is based on a group of 1,000 newly-hired employees. For the purposes of simplicity, all individuals have a common set of features. All newly-hired employees are female teachers aged 30 on the starting date of their employment. They work for three years and then take a two-year break from their careers for child rearing. They return to work at age 35 and continue working until age 62. Thus, the length of the career is 30 years. By their final year of work, their salary has reached $60,000, having grown by 3.31 percent each year.[19] For modeling purposes, the analysis assumes that prior to retirement, no one dies and there is no turnover within the pool of teachers.

The analysis maintains the same $60,000 age-62 salary that was used in the 2008 report, even though wages have grown in the intervening period. This was done so that the absolute numbers can be compared. The amount of salary does not matter in terms of the most important outcomes of this study – comparing the costs (as a percent of payroll) of providing target benefits under different types of plans and finding that DB plans can provide the same value as DC plans at about half the cost.

Target Benefits

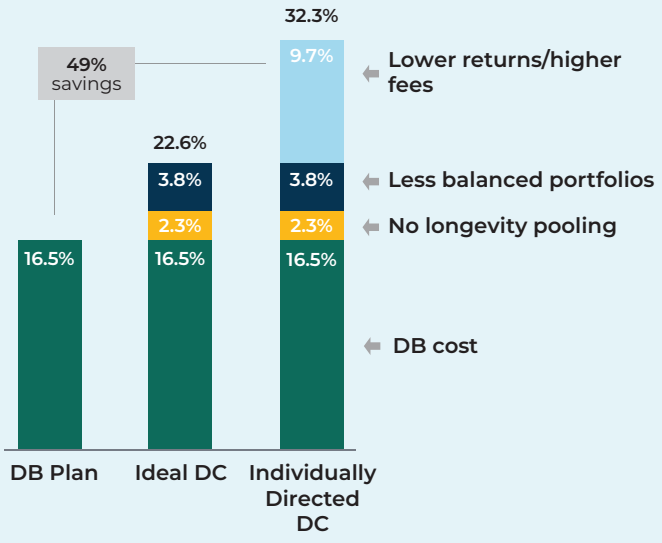
Next, the study defines a target retirement benefit that, combined with Social Security benefits, will allow the 1,000 teachers to achieve generally accepted standards of retirement income adequacy. The target benefit is $32,036 per year or $2,670 per month. A cost-of-living adjustment is provided to ensure the benefit maintains its purchasing power during retirement. Thus, each teacher will receive a benefit equal to 53 percent of her final year's salary that adjusts with inflation, which is assumed to be 2.31 percent per year. With this benefit and Social Security benefits, each teacher can expect to receive roughly 83 percent of her pre-retirement income—a level of retirement income that can be considered adequate, but not extravagant. The study defines certain parameters for longevity and investment returns. On the basis of all these inputs, the analysis calculates the contribution—as a percentage of payroll—that will be required to fund the target retirement benefit through the DB plan over the course of a career. The analysis does the same for the DC plans.

IV. FINDINGS: DB PLANS ARE STILL MORE COST EFFECTIVE

The cost of either a DB or DC plan depends, in the first instance, on the generosity of the benefits that it provides. However, for any given level of benefit, a DC plan will cost more than a DB plan. On average a dollar invested in a DB plan will generate more retirement income than a DC plan. In other words, DB plans are more efficient.

The study finds that the cost to fund the target retirement benefit under the DB plan comes to 16.5 percent of payroll each year. By comparison, the analysis finds that the cost to provide the same target retirement benefit is 32.3 percent under the individually directed DC plan and 22.6 percent of payroll under the ideal DC plan. As illustrated in **Figure 1A**, the DB plan can provide the same benefit at a cost that is 49 percent lower than the individually directed DC plan and 27 percent lower than the ideal DC plan.

Figure 1A: Cost of DB and DC Plan as Percentage of Payroll, Baseline Scenario



The DB cost advantage stems from differences in how benefits are paid out in each type of plan, how investment allocations shift in DC plans as individuals age, and how actual investment returns in DC plans compare with those in DB plans.

There are three primary reasons behind DB plans' cost advantage.

- First, because DB plans pool the longevity risks of a large number of individuals, these plans need only accumulate enough funds to provide benefits for the *average* life expectancy of the group. If individuals did this in a DC plan, they would face a 50 percent chance of running out of money in retirement. To reduce the risk of running out of funds to a reasonable level, individuals need to accumulate enough funds to last several years past average life expectancy. Using the 75th percentile life expectancy requires more funding in a DC plan (without longevity risk pooling), but also exposes participants to a one-in-four chance of either running out of money or needing to reduce the amount they withdraw for income.

- Second, because DB plans have a much longer investment horizon than individuals, they take advantage of the enhanced investment returns from maintaining a balanced portfolio over a long period of time. The reason behind the longer investment horizon is that a mature DB plan has a mix of younger workers, older workers, and retirees. By contrast, individuals in DC plans must gradually shift to a more conservative asset allocation as they age to protect against financial market shocks later in life. This means DB plans can withstand bear markets and keep a larger share of their investments in stocks and other assets that offer higher returns over the long term but fluctuate more in the short term compared to bonds and other fixed income securities. DB plans also are better positioned to take advantage of "illiquid" investments that offer premium returns—for instance, real estate and private equity. These factors allow DB pensions to ultimately earn higher returns based on asset allocation.

- Third, DB plans achieve even greater investment returns compared with typical individually directed DC plans based on lower fees and professional management. Superior returns can be attributed partly to lower fees that stem from economies of scale: assets are pooled in DB plans, where DC plans consist of individual accounts. In addition, because of professional management of assets, DB plans achieve superior investment performance compared to the average individual

investor. DB investment managers have fiduciary duty and must meet the standard of prudence. In contrast, it is well documented that individual investors make inappropriate decisions regarding both asset allocation and market timing—and thus tend to earn returns that lag behind market returns.[20] This effect is sometimes called "behavioral drag."

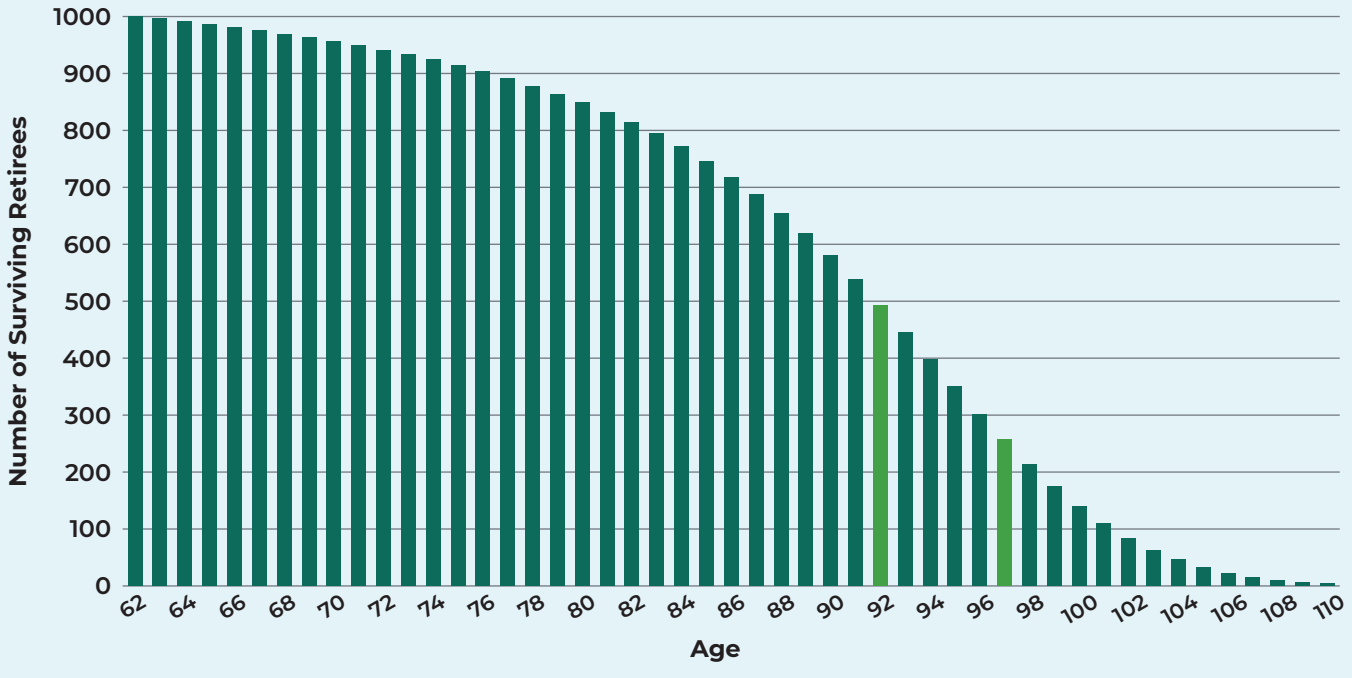
Longevity Risk Pooling

Longevity risk describes the uncertainty an individual faces with respect to their exact lifespan. While actuaries reasonably can predict that, on average, a pool of female teachers who are 30 today and who will retire at age 62 will live to be 92, they also can predict that some will live only a short time, and some will live to be over 100. **Figure 2** illustrates the longevity patterns among the 1,000 teachers. With each passing year, fewer retirees are still living. Age 92 corresponds to the year when roughly half of retirees are still alive.

In a DB plan, the normal form of benefit is a lifetime annuity, that is, a series of monthly payments that lasts until death. A DB plan with a large number of participants can anticipate the fact that some individuals will live longer lives and others will live shorter lives. Thus, a DB plan needs only to ensure that it has enough assets set aside to pay for the average life expectancy of all individuals in the plan, or in this case, to age 92. Based on the target benefit level, the DB plan needs to have accumulated approximately $520,000 for each participant in the plan by the time they turn 62. This amount is projected to be sufficient for every individual in the plan to receive a regular, inflation-adjusted monthly pension payment that lasts as long as they live. The contribution level required to fund this benefit over a career comes to 16.5 percent of payroll.

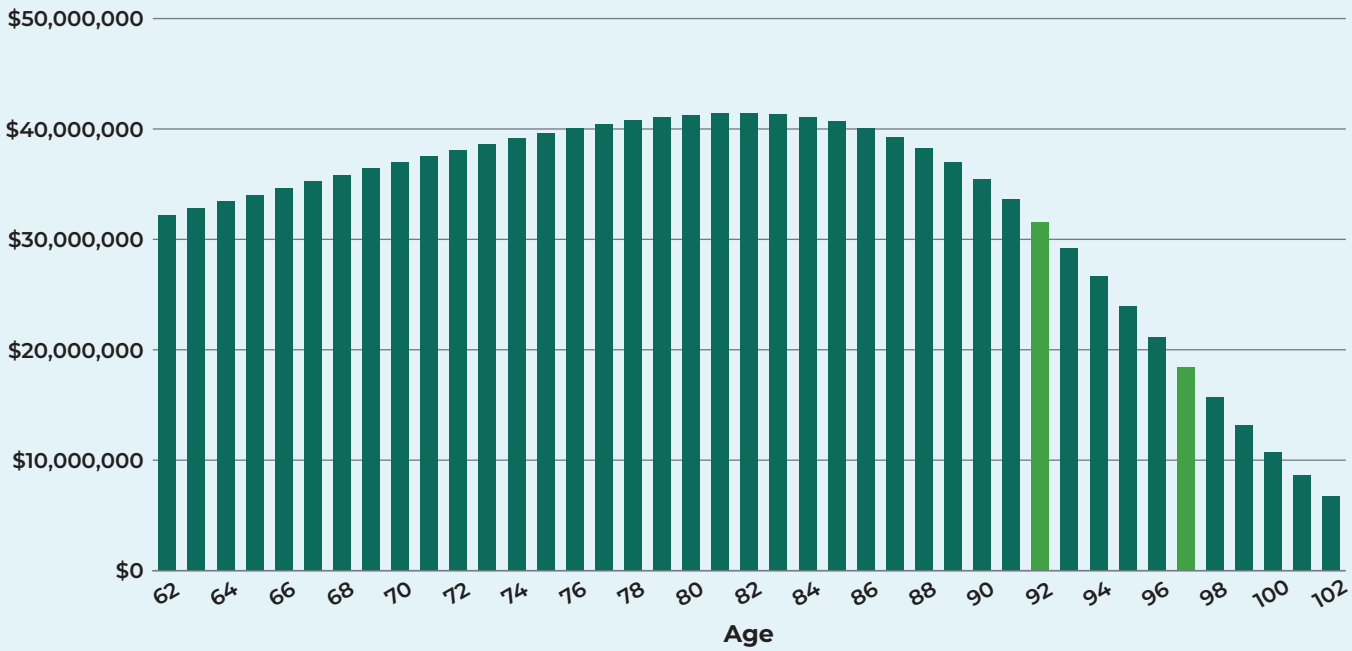
Total annual payments out of the DB plan will have a hump shaped pattern as seen in **Figure 3**. The amount of benefits paid out will increase for a number of years, because the effect of inflation adjustments is greater than the effect of individuals gradually dying off. At age 82, the impact of retiree deaths overtakes the effect of the cost-of-living adjustments and payments decline with each passing year. In the DB plan, every retiree receives a steady inflation-adjusted monthly income that lasts until her death.

Figure 2: Longevity of 1,000 Retired Female Teachers



Note: Chart represents life expectancy at age 62 for female teachers hired at age 30 in 2021.

Figure 3: Total Payments Under the Defined Benefit Plan



Next, the study contrasts this situation with that in a DC plan. In the vast majority of cases, individuals must self-insure longevity risks (or purchase an annuity as discussed below). This can be an expensive proposition.

Because an individual in a DC plan does not know exactly how long they will live, they probably will not be satisfied with a benefit sufficient to last only for the *average* life span, for if they live past age 92, they will have depleted retirement savings. For this reason, an individual probably will want to be sure that they have enough money saved to last for several years past average life expectancy.

The analysis models the DC plan to provide income for the 75th percentile life expectancy, age 97. It corresponds to the age beyond which only 25 percent of individuals survive.[21] This is a conservative target. In fact, the mortality table indicates that it is likely that one individual out of the 1,000 will celebrate their 112th birthday. It is not clear that most individuals will be satisfied with a 75 percent chance of not outliving their money, and in using this life expectancy, the study understates the cost of the DC plan. **Figure 4** illustrates the payout pattern under the DC plan, where individuals withdraw funds on an equivalent basis to the DB plan until age 97—that is, in a series of regular, inflation adjusted payments. At age 97, there are no more withdrawals. The money has simply run out.

Of course, those 25 percent of individuals who do survive to age 97 and beyond would want to avoid the possibility of having their retirement income reduced to zero. It is likely that individuals will respond to longer lives by gradually reducing their withdrawals from the plan to avoid running out of money. This means that those with very long lives will see their standard of living reduced significantly. At the same time, it is difficult to exactly predict one's lifespan, some retirees who live past age 96 will reduce their withdrawals more than they actually need to. Finally, if a retiree dies before exhausting all of her retirement savings, the money in the account passes to her estate. The funds that were intended to be retirement income become death benefits paid to heirs instead. **Figure 5** illustrates the combined effect of reduced withdrawals and estate payments.

Figure 4: Total Benefit Payments Under the DC Plan Based on Life Expectancy of 97

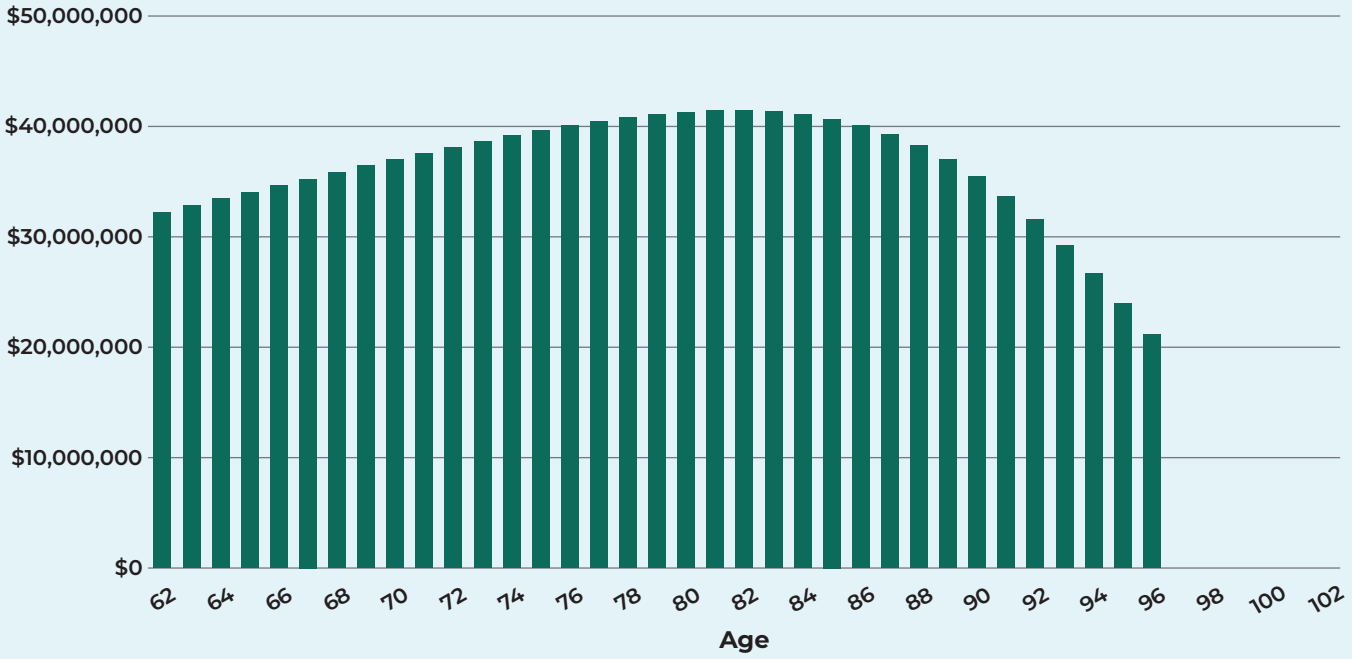
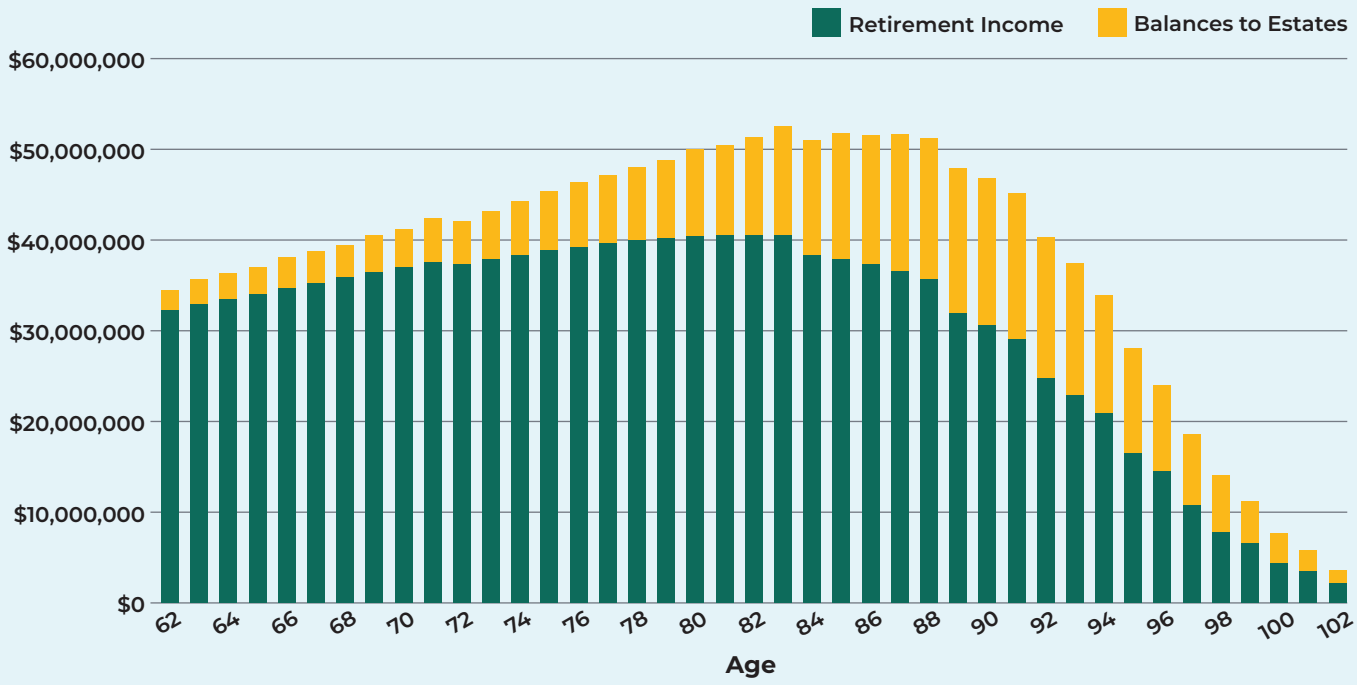


Figure 5: Total Benefit and Estate Payments Under the DC Plan Based on Adjusted Withdrawal Strategy



The aggregate amount of money transferred to estates is substantial—15 percent of the value of the DC plan. While some individual heirs will benefit from these intergenerational transfers of wealth, such transfers are not economically efficient from a taxpayer or employer perspective. Because heirs did not provide services from which the employer/taxpayer benefited, providing additional benefits to heirs is economically inefficient. Moreover, the amount of these additional "death benefits" are not tied in any direct way to an individual employee's productivity during her working years.

In addition, although annuities purchased through private insurance companies may offer full protection against longevity risk, this protection comes at a significantly higher cost than the same protection provided by a DB pension.[22]

DB plans avoid this problem entirely. By pooling longevity risks, DB plans not only provide all participants in the plan with enough money to last a lifetime, but also accomplish this goal with less money than would be required in a DC plan. Because DB plans need to fund only the *average* life expectancy of the group, rather than the *maximum* life expectancy for all individuals in the plan, less money needs to be accumulated in the pension fund. Remember that the DB plan needs to accumulate about $520,000 for each participant in the plan by the time they turn 62 in order to fund the target level of benefit.

In contrast, DC plans must accumulate almost $600,000 per participant, or nearly $75,000 more, in order to minimize the likelihood of that individual running out of funds. This additional amount extends retirement income from average life expectancy to the 75th percentile life expectancy. **In order to accumulate the additional amount necessary for DC plan participants to self-insure against this level of longevity risk, contributions to the plan would climb to 18.8 percent of pay, from 16.5 percent under the DB plan** (an increase of 14 percent). This assumes the same net investment returns, but as demonstrated below, the two remaining factors contribute to DC plans having inferior returns compared to the DB plan.

Maintenance of Portfolio Diversification (Staying Invested in Equities)

A retirement system that achieves higher investment returns can deliver a given level of benefit at a lower cost. All else being equal, the greater the level of investment earnings, the lower contributions to the plan will need to be. Prior research substantiates DB plans' significant advantage in investment returns, as compared with DC plans.

Part of the reason why DB plans tend to achieve higher investment returns as compared with DC plans is that they are long-lived. That is, unlike individuals, who have a finite career and a finite lifespan, a DB pension fund endures across generations; thus, a DB plan, unlike the individuals in it, can maintain a well-diversified portfolio over time. This well-diversified portfolio will include investments which are expected to earn higher returns, but which come with greater risk, whereas a less diversified portfolio in a DC plan will focus on more secure, but lower returning asset classes. In DC plans, individuals' sensitivity to the risk of financial market shocks increases as they age. The consequences of a sharp stock market downturn on retirement assets when one is in their late 50s are substantial, compared to when one is in their 20s with sufficient time to recover their losses.

For this reason, individuals are advised to gradually shift away from higher risk/higher return assets as they approach retirement, which is built into the design of TDFs. While this shift offers some insurance against the downside risk of a bear market, it also sacrifices expected return since more money will be held in bonds, cash, and similar assets that offer lower rates of return in exchange for more security. A reduction in expected investment returns will require greater contributions to be made to the plan in order to achieve the same target benefit.

Researchers have found a large and persistent gap when comparing individually directed investment returns against market performance. A 2018 report from CEM Benchmarking found that DB pensions outperformed DC plans in average net returns by 46 basis points, net of fees, over the 10 years ending in 2016. Note that this was considerably smaller than the 99 basis point difference found in their 2013 report. The analysis credits this narrowing gap to an improved asset mix, better plan design, and lower costs in DC plans.[23] The difference in returns has a long history and has been noted in prior reports as well, as Watson Wyatt found that DB plans outperformed DC plans by an annual average of 76 basis points, net of investment expenses, from 1995 to 2011.[24]

Within DC plans, the gap between individual and market performance seems to have narrowed, particularly for investors using TDFs. When participants use a fully self-directed approach rather than through the employer DC plans, however, the large gap seems to persist. Morningstar continues to find a 1.7 percent difference between actual investor returns and the total returns their funds generated over the same time period.[25] Morningstar also found that the gap was the smallest for investor dollars in allocation funds, such as TDFs, which combine stocks, bonds, and other asset classes, which they note are now core holdings in employer

401(k)s. The improvement within DC plans, but continued lagging performance overall, suggests that changes to DC plan design and offerings are helping participants significantly during their working years.

These studies aggregate asset allocation and investment returns. This does not present much of a problem for DB plans, because asset allocation is relatively consistent across large funds that tend to be mature and have roughly similar demographic profiles. However, aggregated DC plan data tells us less about the "typical" investor because there is a large dispersion of asset allocations and returns among individual investors. In addition, aggregated data is of limited usefulness in determining long-term returns over a typical individual's career and retirement years as their asset allocation shifts from equities to fixed income securities, as prescribed by the TDF or lifecycle investment strategy.

In order to estimate investment returns for the DB and DC plans over teachers' working and retirement years, the analysis starts with asset allocation for each plan and then applies a uniform set of assumptions about the long-term returns for each asset class. The DB plan is assumed to have an asset allocation typical of a large public sector DB plan. In the ideal and individually directed DC plans, participants are expected to gradually shift out of higher risk/higher return assets in favor of lower-risk/lower return assets.

Figures 6A and **6B** show the expected net annual investment return by age for the DB plan and both DC plans for the two scenarios studied. Figure 6A reflects a baseline scenario, while Figure 6B represents a future with persistently low interest rates. In the baseline model, the well-diversified DB plan is expected to achieve investment returns of 6.80 percent per year, net of fees. The low interest rate scenario begins with a DB return of only 5.68 percent. The net returns for the ideal DC plan (modeled with the same expenses and investment skill assumptions as the baseline DB plan, as explained later) show that while the typical TDF asset allocation glide path used for the DC plans in this study earns higher returns than the DB plan during the first half of a teacher's career, those returns drop below the DB plan when she is in her late 40s. To preserve her retirement wealth after she stops working, the teacher needs to reduce her exposure to equities even more. This results in a sacrifice of expected annual returns of 2.30 percent by age 96 in the ideal DC plan and 3.98 percent in the individually directed DC plan. For detailed DB and DC asset allocation and projected investment returns, including a discussion of the low interest rate scenario, see Table A1 in the Technical Appendix.

Figure 6A: Expected Annual Investment Return, Baseline Scenario (net of fees)

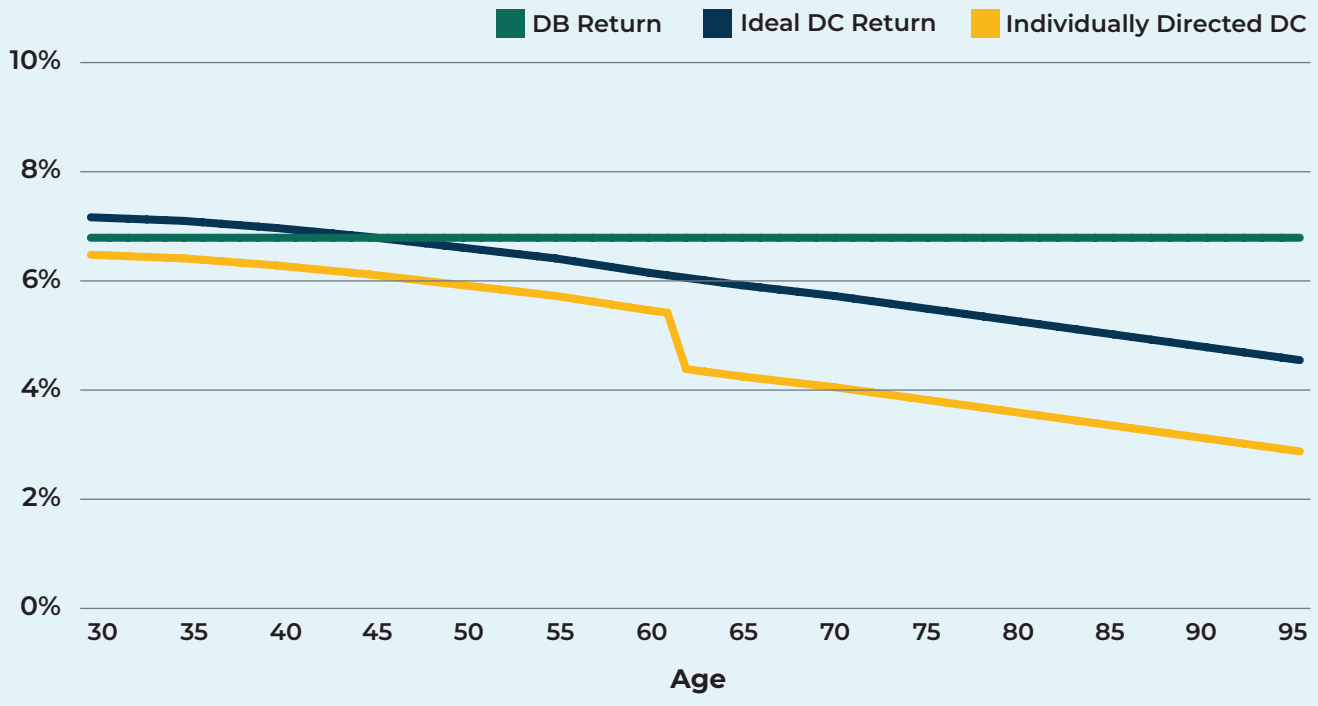
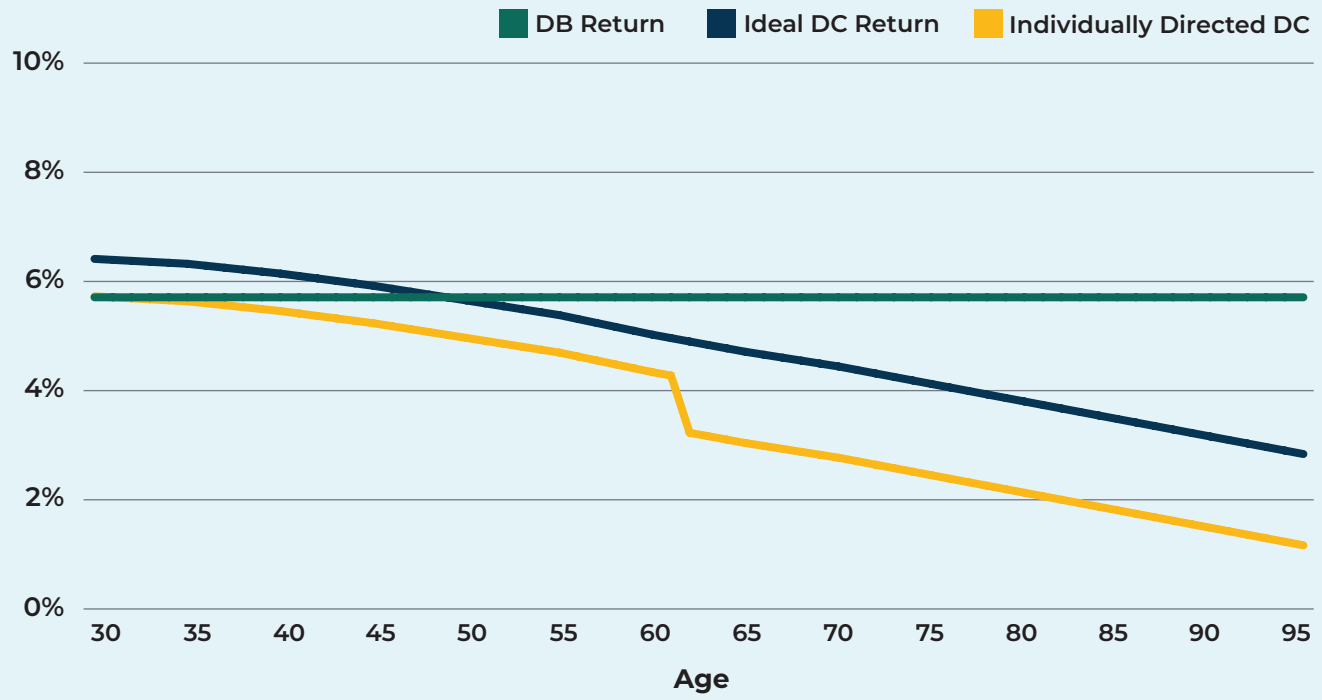


Figure 6B: Expected Annual Investment Return, Low Interest Rate Scenario (net of fees)



The analysis finds that the shift in portfolio allocation has a modest, but nonetheless significant, effect on cost. Specifically, the analysis finds that the per-retiree amount that must be accumulated in the DC plan by retirement age now climbs to nearly $700,000. By comparison, the DB plan requires just over $520,000. After accounting for asset allocation in addition to longevity risk, contributions required to fund the target benefit now climb to 22.6 percent of payroll in the DC plan compared to 16.5 percent of payroll under the DB plan (an increase of 37 percent). This summarizes the cost difference between the ideal DC plan and the DB plan. To arrive at the full cost difference for the individually directed DC plan, differences in investment expertise and expenses must be taken into account.

Superior Net Returns Compared to Individually Directed DC Plan

In addition to asset allocation, another important reason why DB plans achieve higher investment returns than DC plans is that DB pension assets are pooled and professionally managed. The model attributes a 69 basis point "drag" during the working years (up to age 62) and 168 basis point "drag" post-retirement in individually directed DC plans, based on fees and well-documented individual investor behavior.[26]

Expenses paid out of plan assets to cover the costs of administration and asset management reduce the amount of money available to provide benefits. As a result, a plan that can keep these costs down will require lower contributions. By pooling assets, large DB plans drive down asset management and other fees. On their face, these differentials may appear small, but over a long period of time, they compound to have a significant impact. To illustrate, over 40 years, a 100 basis point difference in returns compounds to a 24 percent reduction in the value of assets available to pay for retirement benefits.[27]

TDF expenses vary depending on whether the underlying funds are actively managed or passively managed (e.g., index funds). The Investment Company Institute's 2021 Fact Book noted that the median expense ratio for TDFs in 2020 was 65 basis points, down from 94 basis points in 2014 and 126 basis points for hybrid funds in 2008.[28] Because of the low fees of both well managed DB plans and well managed DC plans which utilize TDF's, we assume that the investment expenses in both plans are the same level.

Administrative costs are largely driven by scale. Thus, a large DB plan or DC plan can have opportunities to negotiate minimized administrative expenses. A DC plan involves costs that do not exist in a DB plan, such as the

costs of individual recordkeeping, individual transactions, and investment education to help employees make good decisions. However, DB plans, unlike DC plans, bear the administrative costs of making regular monthly payments after retirement.

But fees are only part of the story; differences in the way retirement assets are managed in DB and DC plans play a substantial role. As previously discussed, investment decisions in DB plans are made by professional investment managers, whose activities are overseen by trustees and other fiduciaries.

DB plans have broadly diversified portfolios and managers who follow a long-term investment strategy. Additionally, the average individual in DC plans, despite their best efforts, often falls short when it comes to making sound investment decisions.

Furthermore, studies show that over the long term, individual investor level returns significantly lag behind the returns of any individual asset class or benchmark—largely due to inappropriate investment decisions.[29] For example, during the 2008 financial crisis, individual participants generally failed to re-balance their asset allocation, and those who did shift assets incurred significant losses by fleeing from equities near the bottom of the market.[30] In 2012 and 2013, investors pulled funds out of asset classes before they experienced price increases, and into asset classes that were about to experience price drops.[31]

The analysis assumes no net disadvantage on the basis of fees or investor skill for the ideal DC plan compared to the DB plan. This is a generous assumption given real life experience with TDF use and with DC investor behavior in general.

Investor "behavioral drag" is assumed to be 69 basis points before retirement and 168 basis points post-retirement. For information on other levels of disparity, please see the Technical Appendix of the 2014 report.

The "behavioral drag" on individually directed DC plan returns – which is greatest post-retirement once funds leave employer-sponsored plans – compounds over time to create a significant cost disadvantage. In particular, the analysis finds that the amount which must be set aside for each individual at retirement age now climbs to almost $880,000 (compared to the roughly $520,000 required in the DB plan). **Thus, after accounting for differences in net returns due to investment expertise and fees—in addition to the longevity risk and asset allocation factors described above—the level of required contributions climbs again for the individually directed DC plan, this time to 32.3 percent of payroll, compared to 16.5 percent under the DB plan** (an increase of 96 percent).

Taken together, the economies that stem from investment pooling and longevity risk pooling can result in significant cost savings to employees and employers/taxpayers. **In this model, required contributions to fund a given level of retirement benefit are 49 percent lower in the DB plan compared with the individually directed DC plan, and 27 percent lower compared to the ideal DC plan.**

V. SUMMARY OF RESULTS: DB PLANS REDUCE COSTS BY NEARLY HALF

The analysis clearly demonstrates that DB plans are far more cost-effective than DC plans. To achieve roughly the same target retirement benefit that will replace 54 percent of final salary, the DB plan will require contributions equal to 16.5 percent of payroll. In contrast, the individually directed DC plan will require contributions to be almost twice as high as the DB plan—32.3 percent of payroll. Even the "ideal" DC plan, generously modeled with the same fees and investor skill as the DB plan—provides benefits at a substantially higher cost of 22.6 percent of payroll.

This study finds that due to the effects of longevity risk pooling, maintenance of portfolio diversification, and greater investment returns over the lifecycle, a DB plan can provide the same level of retirement benefits at about 27 percent lower cost than an ideal DC plan and about 49 percent lower cost than an individually directed DC plan.

Table 1 breaks down the cost savings realized by the DB plan relative to the individually directed DC plan. First, the longevity risk pooling that occurs in the DB plan accounts for 7 percent cost savings. Second, the DB plan's ability to maintain a more diversified portfolio drives another 12 percent cost savings. Third, superior net investment returns across the lifecycle generate an additional 30 percent reduction in cost compared to an individually directed DC plan—bringing the total cost savings to 49 percent.

Table 1: Tallying DB Plan Cost Savings Compared to Individually Directed DC Plan

Source	Savings
1. Longevity Risk Pooling	7%
2. Maintenance of Portfolio Diversification (staying invested in equities)	12%
3. Lower Fees and Professional Management	30%
All-In Cost Savings in DB Plan	49%

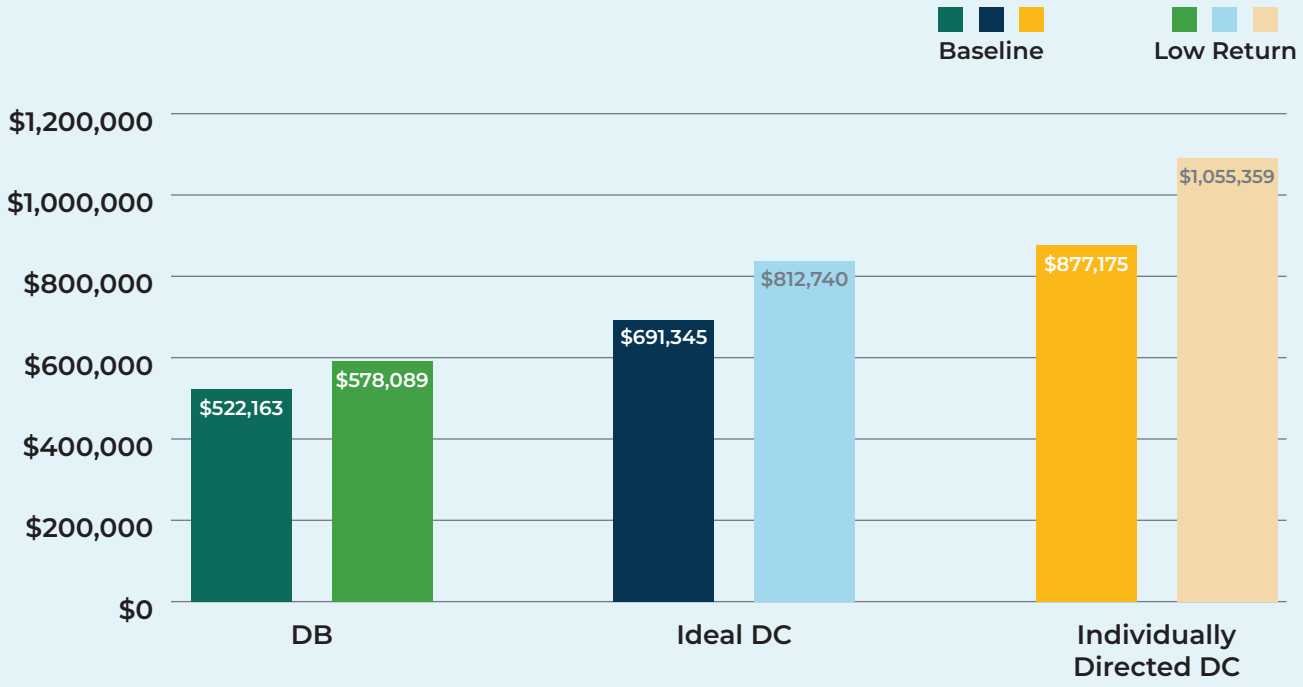
The results also indicate that DB plans can do more with less. That is, DB plans can ensure that all individuals in the plan (even those with very long lives) are able to enjoy an adequate retirement benefit that lasts a lifetime, at the same time that they require less money to be contributed to a retirement plan and fewer assets to accumulate in the plan. The study calculates the amount of money that would be required to be set aside for each retiree in each type of plan, to provide a modest retirement benefit of about $2,700 per month.

Figure 7A illustrates the comparison between the baseline investment scenario and the low-return environment. It shows that at retirement age, the DB plan requires just over $520,000 to be set aside for each individual. However, in the persistent low-return environment, the cost jumps about $60,000 to around $580,000. The ideal DC plan requires nearly $700,000 in the baseline scenario, and the low return scenario increases that cost by almost $122,000 (to $810,000). Meanwhile, the individually directed DC plan requires $877,000 in the baseline scenario, with the low return environment driving up costs to over $1 million.

The difference in resources needed at retirement between the DB plan and the two DC plans illustrates that the efficiencies embedded in DB plans can yield large dollar savings for employers, employees, and taxpayers. The low return scenarios widen the efficiency gap both in terms of the dollar increase and the percentage increase in costs--with the target level of resources needed for the DB plan increasing 11 percent, while the individually directed DC target increases by 20 percent.[32]

As discussed in the next section, the target level of resources needed to produce the same income levels for the three types of plans enables us to look at the share of overall inefficiencies that are experienced post-retirement compared to during the working years.

Figure 7A: Per Employee Amount Required at Age 62, DB Plan vs. DC Plan, Baseline Scenario and Low Interest Rate Scenario



This report also looks at how the efficiency of the same three plans is impacted when workers are hired mid-career (at age 45). **Figure 7B shows the resources needed at retirement for the target benefit under each plan, with the partial career benefit being 57 percent of the full career benefit (working 17 years instead of a full 30)**. The differences among the three plans in Figure 7B represent the cost differential for the three plans during post-retirement years stemming from longevity pooling and higher/lower returns. The post-retirement efficiency gap is unaffected by the mid-career start, as the post-retirement experience is the same (see **Table 2** below).

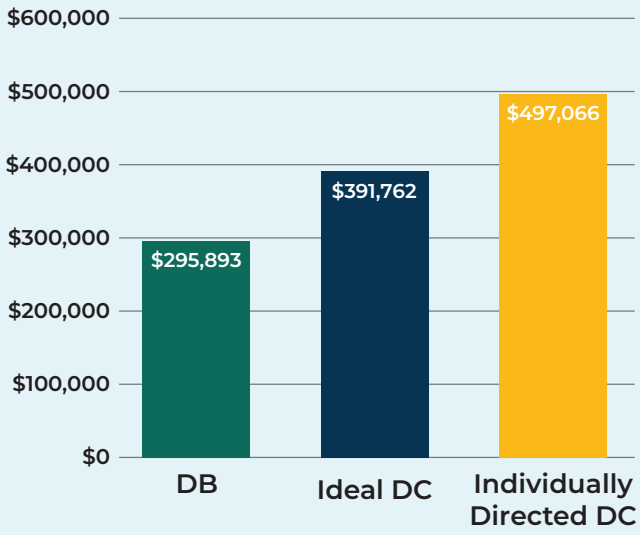
Figure 1C lays out the cost of accruing the resources in each plan to fund the mid-career hire target benefit. The percent of payroll needed to fund the target benefit amount increases under all three plans because the contributions start at a later age, allowing less time for investment returns to accrue and subsidize benefit costs. Even with a smaller targeted benefit, a higher contribution rate is required as a result of fewer years of investment earnings. For the DB plan, the rate increases by 29 percent to fund the target benefit for the mid-career hire, while the individually directed DC plan rate increases by 22 percent.

It is important to remember that, if a DC plan were to calculate a contribution rate needed to reach a targeted level of resources, any such figure would be applicable only to an individual—not the entire workforce. However, normal costs in pension systems are blended, or averaged over all participants. Therefore, comparing a DB plan's blended normal cost to a benefit example for an individual young person hired in a DB plan is not an apples-to-apples comparison.

One takeaway is that any benefit analysis comparing costs and benefit outcomes under DB and DC plans should include a range of ages at hire, so the benefit impacts for those hired at younger and older ages are well understood. This is particularly true given that DB accruals (as dollars of annual income earned for a year of service) increase gradually throughout one's career, while early dollars are much more effective at generating retirement income in a DC plan.[33]

The findings indicate that DB plans provide a better bang for the buck when it comes to providing retirement income, which is illustrated in the baseline scenario, the low return scenario, and when looking at workers hired mid-career. The analysis finds that an individually directed DC plan costs nearly twice as much to provide the same level of retirement income as a DB plan. Even compared to an ideal DC plan with generous assumptions about fees and investor skill, a DB plan delivers the same benefit for 19 percent less cost.

Figure 7B: Per Employee Amount Required at Age 62, DC Plan, Mid-Career Hire Scenario



Hence, DB plans should remain a centerpiece of retirement income policy and practice, given the persistent advantages in economic efficiency.

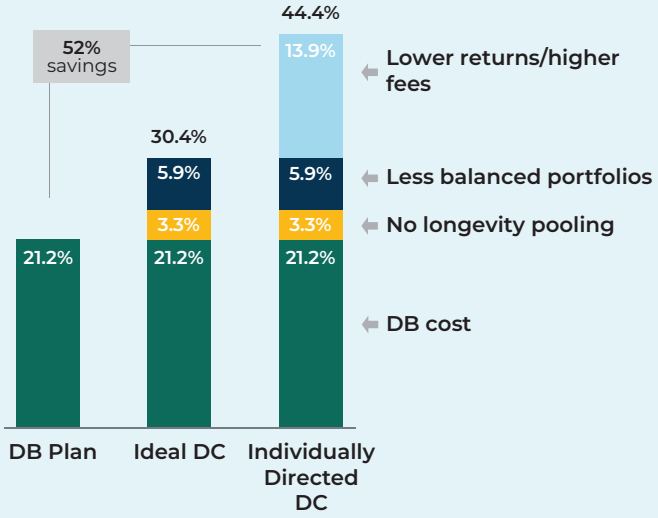
The Cost Impact of Incorporating Today's Low Interest Rate Environment

In addition to the baseline scenario, this study analyzes how all three plans would be impacted by a set of assumptions that includes today's low interest rate.

Figure 1B shows the costs of equivalent benefits in the three plans, where market returns are below historical levels. All three plans experience higher costs as a result of lower expected investment returns, which means a higher share of these costs come from contributions (and less from returns) compared to the baseline scenario. DB plan costs increase from 16.5 percent of payroll to 21.2 percent due to lower returns--an increase of 28 percent. Similarly, the ideal DC cost increases by 35 percent to 30.4 percent of payroll. And the individually directed DC costs increase by 37 percent, leaving a contribution of 44.4 percent of payroll to fund the same benefits.

It is worth noting that the assumption set for this scenario includes near-term pessimism that investors currently hold on equity returns over the next decade, since equity prices have run up significantly during the pandemic. This scenario also considers the current low interest rate environment. The baseline scenario backs out this near-term equity pessimism and low interest rates. This may be reasonable, given that these projections (for a 30-year-old hired today) span the next seven decades.

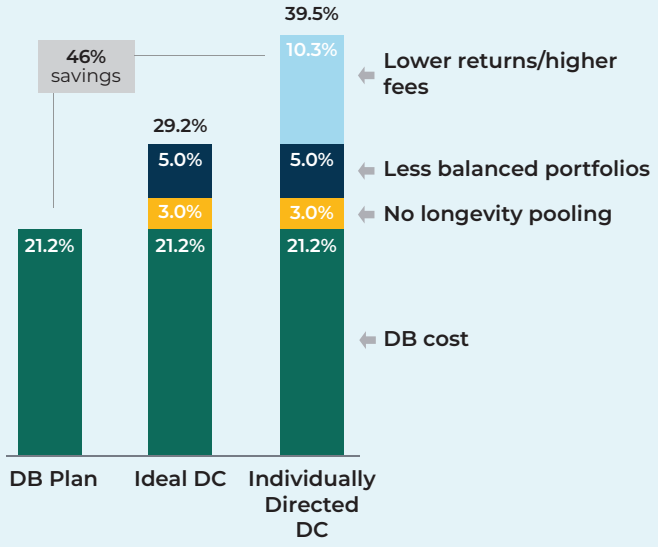
Figure 1B: Cost of DB and DC Plan as Percentage of Payroll, Low Return Scenario



The Cost Impact for Mid-Career Hires

In addition to the baseline scenario, this study analyzes the economic efficiency for an employee who was hired mid-career (age 45). The overall economic efficiency advantage of DB plans is consistent with the baseline findings, although reduced slightly due to the shorter accumulation period.

Figure 1C: Cost of DB and DC Plan as Percentage of Payroll, Mid-Career Hire



Post-Retirement DC Experience Drives Four-Fifths of Efficiency Gap

Another new aspect to this update is the addition of an analysis of how much of the DC inefficiency gap occurs before and after retirement.

Much of the challenge with DC plans, in terms of delivering value, occurs after one retires. This becomes clear when considering the returns at different ages, as shown on Figures 6A and 6B. For instance, returns at all ages are 6.80 percent for the DB plan in the baseline scenario. The individually directed DC plan only lags by 38 basis points at age 35, and the ideal DC plan actually has higher returns. Because the amount of assets accrued at this age is relatively low compared to later ages, these higher returns do not have much impact over a full lifetime.

But, when looking toward the post-retirement years, the differences in annual investment returns increase to 131 basis points for the ideal DC and 299 basis points for the individually directed DC at age 75. Given that account balances are expected to be largest at retirement, the 242 basis point difference between the DB plan and the individually directed DC returns at age 62 is a significant cost-driver, as are all years after retirement when DC participants are typically advised to be more risk-adverse.

Across the three scenarios, about four-fifths of the inefficiencies in the individually directed DC plan (relative to the pension plan) occur after retirement. In the baseline scenario, the pension benefit was 49 percent less expensive. Put another way, the individually directed DC plan was 49 percent more economically inefficient. However, even if there were no difference before retirement, the DB plan still would reduce costs by 40 percent over the individually directed DC plan due to inefficiency throughout the post-retirement years. The post-retirement inefficiency was the same for mid-career hires (with the same return assumptions), but with fewer working years the pre-retirement inefficiencies were slightly lower. The market assumptions used for the persistent low interest rate environment increased the efficiency gap overall, but also moved a small portion of the difference from the working years to the post-retirement years. It is notable that the efficiency gap during the post-retirement experience of the low interest rate scenario is 45 percent alone.

The DC industry is focused on the post-retirement experience, and has been a topic of legislative proposals. Retirees typically withdraw their funds at retirement and manage their money outside of a workplace plan that offers fiduciary protections. DC plans have been successful at lowering investment fees. The move from a workplace plan to managing funds on one's own is a move from a wholesale to a retail experience—with associated higher fees. Retail investment recommendations face a lower legal standard protecting retirees. As some 401(k) providers seek to keep retirees in workplace plans by providing viable lifetime income options, there is room for improvement. DC plans would achieve greater economies if fees reduce further.

Using private annuities to generate life income in DC plans would not close the efficiency gap with DB plans. This was explored extensively in the 2014 report. Private annuities are expensive due to factors such as the cost of inflation protection, inherent costs faced by insurance companies; the current low interest rate environment increasing annuity costs; and insurance company statutory capital

Table 2: DC Plan Efficiency Gap

	Baseline Scenario	Mid-Career Hire	Low Return Environment
Post-Retirement Inefficiency	40%	40%	45%
Pre-Retirement Inefficiency	9%	6%	7%
Total Inefficiency	49%	46%	52%

requirements which DB plans do not face. The expense of private annuities is a factor in the low utilization by retirees. Building an annuity into a workplace DC plan could perhaps reduce some of these costs and deliver greater value to retirees, but doing so efficiently is challenging when the risk pool is composed of only retirees and no younger workers.

Attention to improving options for spending down DC assets is well-deserved. However, the gap will not be reduced significantly without the benefits of risk-pooling and risk premiums that come with investments in equities – particularly in light of today's historically low interest rate environment.

CONCLUSION

Despite notable changes in the retirement benefit landscape since 2008, including some improvement in DC performance and fees, DB pensions retain their cost advantage as a means of providing retirement benefits to workers. This study compares the cost of providing equivalent benefits through a typical large public sector DB plan, an ideal DC plan, and an individually directed DC plan. The study also examines the impacts of both a mid-career start to saving and a persistent low interest rate environment on the efficiency of these three plan types.

Due to the advantages of longevity risk pooling and the maintenance of portfolio diversification, the DB plan costs less than a DC plan, even compared to the ideal DC plan with no disadvantage in terms of fees and investor skill. And when examining the individually directed DC plan with more realistic assumptions regarding fees and investor skill, the cost of the DC plan doubles compared to the DB plan because the DB plan realizes a hefty additional cost advantage due to its low expenses and professional management of assets.

The sources of cost savings in DB plans reflect, at a very basic level, the differences in how DB and DC plans operate. Group-based DB plans provide lifetime benefits and feature pooled, cost-efficient, professionally managed assets invested over a long time horizon. These features drive significant cost savings that benefit employers, employees, and taxpayers. While well-designed DC plans can theoretically mimic some of these advantages—for instance, employers may select low-fee TDFs as a default investment option for their workers—DB plans would still retain their advantages of longevity risk pooling and long-term portfolio diversification. Using private annuities to convert DC account balances at retirement into a lifetime income stream does not close this gap because such annuities are expensive, especially when they include the kind of inflation protection offered by public DB plans. In fact, the analysis reveals that four-fifths of the inefficiency of DC plans occurs post-retirement.

When considering the results, it is important to keep in mind that in an effort to construct an "apples to apples" comparison, the analysis made a number of simplifying assumptions that do not account for other disadvantages of DC plans. For instance, this analysis did not model any asset leakage from either the ideal or individually directed DC plan before retirement through loans or early withdrawals. The analysis also assumes that individuals followed a sensible "goldilocks-like" withdrawal pattern in retirement—not too fast, not too slow, but just right. This study used conservative estimates of the difference in actual investment returns between DB and DC plans. And, the analysis uses 75th percentile life expectancy to project required accumulations in the DC plans, which means 25 percent of individuals will either outlive their savings or have to reduce drawdowns (income) in their later years.

Thus, if anything, the analysis underestimates the cost of providing benefits in a DC plan and thereby understates the cost advantages of DB plans.

Due to the built-in economic efficiencies of DB plans, employers and policy makers should continue to carefully evaluate claims that "DC plans will save money." As discussed, benefit generosity is a separate question from the economic efficiency of a retirement plan. While either type of plan can offer more or less generous benefits, DB plans have a clear cost advantage for any given level of retirement benefit. Consequently, shifting from a DB plan to

a DC plan and maintaining the same contribution rate will generate significant cuts in retirement income. Considering the magnitude of the DB cost advantage, the consequences of a decision to switch to a DC plan could be dramatic for employees, employers, and taxpayers.

Finally, policymakers should focus on how to best encourage life income options in DC plans. This is a significant technical challenge, but improved post-retirement options would make retirement in a DC plan more effective. However, it must be done in a manner that presents good value to retirees, as much opinion research indicates retirees are very interested in life income options--but currently few retirees purchase annuity products. Improving offerings may result in closing the gap between the desire of retirees to simplify their finances and their actual behavior. In addition, policymakers should consider proposals that can strengthen existing DB plans and promote the adoption of new ones. When viewed against the backdrop of workers' increasing insecurities about their retirement prospects and the economic and fiscal challenges facing employers and taxpayers, now more than ever, policy makers ought to focus their attention and energy on this important goal. Many features that make DB plans attractive to employees drive cost savings for employers and taxpayers. In this way, DB plans represent a rare "win-win" approach to achieving economic security in retirement that should be recognized and replicated.

TECHNICAL APPENDIX

Methodology

This report calculates the cost, expressed as a level percent of payroll over a career, of achieving a target benefit in a typical DB plan and compares that with the cost of providing the same target benefit in a typical DC plan.

The analysis begins by constructing a cohort of 1,000 newly-hired employees. This cohort is given a common set of features. All are female teachers age 30 on the start of their employment. They work for three years and then take a two-year break from their careers to have and raise children. They return to work at age 35 and continue working until age 62. Thus, the length of the career is 30 years. By their final year of work, their salary has reached $60,000, having grown by 3.31 percent each year.

Modeling DB Plan Benefits and Costs

The DB plan provides a benefit in retirement equal to 1.85 percent of final average salary for each year worked, which represents approximately the median benefit among DB plans covering public employees (hired before the Great Recession) who are also covered by Social Security.[34] Final average salary is calculated on the basis of the final three years of one's career, which in this case is $58,098. Thus, the initial benefit in the DB plan is $32,244 per year or $2,687 per month.

The DB plan provides a cost-of-living adjustment that ensures the benefit maintains its purchasing power during retirement. Inflation is projected at 2.31 percent per year in the baseline scenario and 2.10 percent in the low return scenario. Thus, each individual in the cohort will receive a benefit equal to 54 percent of her final year's salary that adjusts with inflation. This DB plan (in combination with Social Security) would allow an employee to meet generally accepted standards of retirement income adequacy, or roughly 83 percent of pre-retirement income.

DB plans typically offer married participants the ability to receive joint-and-survivor annuity benefits, whereby when the retiree dies, her spouse can continue to receive a monthly benefit that will last the spouse's lifetime. But the retiree often pays the cost of this survivor's benefit. That is, the monthly benefit that would be payable on a single-life basis will be reduced by an actuarially determined factor to account for the fact that payments may continue if the retiree dies before her spouse. Therefore, for simplicity, the study models all benefit payouts on a single-life basis (and does the same for the DC plan), using the Generational RP-2014 Healthy Female Annuitants mortality table with projection under scale MP 2021 (hired in 2021 at age 30).[35]

To model the contributions that are required to fund these benefits, the analysis first establishes expected investment returns based on asset allocation. To construct

the asset allocation and future returns for the DB pension, the analysis draws on the latest available average public pension asset allocation and expected return data from surveys from a number of sources: Aon, Horizon Actuarial Services, Investment Company Institute, Morningstar, Vanguard, and the Public Plan Database.[36] In particular, the Public Plan Database was used to set allocations to broad asset categories, such as public equity, fixed income, private equity, real estate, hedge funds, cash, and other investments. For investment return assumptions by asset class, the analysis drew on proprietary data provided by Aon and the Horizon Actuarial Services' Survey of Capital Markets Assumptions. The results are listed in **Tables A1** and **A2**.

The baseline scenario analysis uses the 2021 Survey of Capital Market Assumptions by asset class over 10 and 20 year periods, conducted by Horizon Actuarial Services. This was adjusted to determine the asset class assumptions for the second 10-year period and the results are shown in the first column of Table A1.[37] Because these projections span over a lifetime of a 30-year old hired in 2021, the longer-term expectation was deemed more appropriate for our analysis. The difference between the Horizon 10-year and 20-year return expectations demonstrates the near-term pessimism that exists as a result of current low interest rates as well as the run up in equity prices during the pandemic.

We made no such adjustment for the second set of capital market assumptions. That analysis used Aon's Investment Consulting Capital Market Expectations as of 2021 Q3 by asset class, as shown in column 1 of Table A2.

Investment consultants and actuaries including Aon use sophisticated techniques including asset class correlation and geometric returns to develop the overall expected rate of return assumption. Such an analysis was beyond the scope of this paper, where a simple weighted average of asset class returns was applied to develop the overall return assumption for the DB plan and the DC plan by age.

Based on this methodology, the DB plan is expected to achieve nominal investment returns of 6.80 percent per year, net of fees, in the base scenario and 5.68 percent in the low interest rate scenario. Readers should exercise caution in comparing this rate of return to expected returns reported by individual public pension funds, because funds tend to use higher inflation assumptions in their forecasting. For the baseline, the analysis used an inflation assumption of 2.31 percent in this study for benefit increases as well as for capital market expectations. For the persistent low interest rate scenario, the study used a 2.10 percent inflation assumption.

On the basis of these inputs, the analysis calculates the contribution that will be required to fund this benefit through the DB plan over the course of a career, and express this as a level percent of payroll. The analysis finds that the cost to fund the target retirement benefit is 16.5 percent of career over a full career. Contributions could be made entirely by the employer or may be split between the employer and employee.

Modeling DC Plan Benefits and Costs

Modeling the cost of the target retirement benefit in the DC plan requires some adjustments based on what is known about how DC plans differ from DB plans. First, because employees are not provided with an annuity benefit at retirement under the DC plan, the analysis determines the size of the lump sum amount that an individual would need to accumulate by their retirement date in order to fund a retirement benefit equivalent to that provided by the DB plan (including inflation adjustments) for a period of 35 years, or to age 97. To make this comparison, the analysis uses a reasonable—though not ideal—spend down strategy of planning for mortality at the 75th percentile life expectancy of female teachers who are now 30 years old can expect when they retire at age 62. This means 25 percent of individuals survive to age 97 and outlive their savings. The other repercussion of this assumption is that 15 percent of the DC value never goes toward producing retirement income. Instead, those who pass away before reaching the age of 97 have their remaining DC asset revert to their estates.

Thus, the model underestimates the cost of funding retirement benefits through a DC plan: as one in four individuals will experience a reduced standard of living, compared to what they would experience under a DB plan. These individuals may have the foresight to gradually reduce their withdrawals from the plan to avoid the possibility of having their retirement income reduced to zero. However, actual behavior varies greatly.

The analysis assumes that the DC plan would be invested in a TDF, which automatically adjusts asset allocation from stocks to bonds as a worker approaches retirement. The study estimates the equity allocation glide path of TDFs from Vanguard's report, *How America Saves 2021*, from 87 percent equities at age 30 to 43 percent equities at age 71, with five percent assumed to be in cash.[38] This data represents participant-weighted average equity allocation (by age) in Vanguard funds in 2020. See **Table A1** for the asset allocation trajectory.[39]

To model the impact of the shift to a more conservative portfolio allocation beyond age 71, the analysis has individuals begin to shift their portfolio allocation to gradually reduce the share held in equities to zero. The model increases the holdings of cash and liquid investments, treasuries and agency debt, and corporate bonds to 100 percent by age 97. The investment/withdrawal strategy modeled is not the result of an optimization rule; rather, it follows this simple straight-line rule.

Finally, in order to arrive at returns for each plan, the model applies estimates of long-term returns for each asset class from Horizon's capital market assumptions survey for the baseline and Aon's capital market expectations for the lower-return scenario.[40] This gives two possible return environments to study, with the same returns by asset category for both DB and DC plans.

Withdrawals are designed to mimic DB plan payouts, at least in the early years of retirement, declining in later years as retirees adjust to the likelihood of living beyond their original target of age 97. Work by William Sharpe and colleagues suggests that an optimal approach would integrate investment and withdrawal strategies. Specifically, Sharpe finds that a constant withdrawal rate must be paired with a riskless investment strategy to be optimal for an individual.[41] However, a post-retirement asset allocation entirely concentrated in risk-free assets would dramatically drive up the cost of the DC plan. Thus, the model's simple investment and withdrawal strategies would tend to understate the cost advantage of DB plans.

Fees and Behavioral Drag

This study includes estimates of DC plan costs and expected returns based on a review of existing research.

The behavioral drag assumptions are different for pre- and post-retirement years. This is because fees have been reduced significantly in DC plans, and DC plans have continued to move toward target date funds that help reduce behavioral drag. However, those improvements are largely limited to the pre-retirement years, as workers typically pull resources out of the wholesale plan environment at retirement (which provides strong fiduciary protections and competitive fees) and move their money to retail investment strategies that come with far fewer protections.

As a result, the investment behavioral drag impact is larger post-retirement. Before retirement, the behavioral drag in the individually-directed DC plan is assumed to be 69 basis points per year. However, post-retirement fees and behavioral drag totals 168 basis points. These figures are approximated based upon Exhibit 1 in Morningstar's *Mind the Gap 2021* report. The report notes that allocation funds (stocks and bonds and other asset classes) often are used as core holdings for 401(k) accounts. Thus, the 69 basis point gap for allocation funds were used as a proxy to represent the TDFs pre-retirement experience. For post-retirement years, the investment drag for all funds was used—without backing out allocation funds—which was 168 basis points.

The study assumes that in an ideal DC plan, the plan sponsor would retain expenses consistent with those of the DB plan, but also assumes that participants would avoid well-documented mistakes related to asset allocation and market timing decisions such as investing too much or too little in stocks, and reacting emotionally to market fluctuations by selling assets as prices fall and buying back into the market as prices rise.[42] In addition to behavioral finance studies, key studies indicate that individual investor returns lag behind market returns. This is not a significant problem for pension funds because they are managed by professionals who exercise discipline in the face of market fluctuations and regularly rebalance. In contrast, investor-level data shows that individuals earn returns significantly below the returns posted by the funds in which they invest.[43]

Estimates of this gap vary depending on the market cycles captured in the time frame, but most studies that cover a long time-horizon show significant under-performance by individual investors. For instance, Morningstar's *Mind the Gap* study found that, in the 10 years ending on December 31, 2020, investors' actual mutual fund returns lagged by 1.7 percentage points per year, noting the "annual return gap is in line with the gaps measured over the four previous rolling 10-year periods, which ranged from 1.6 to 1.8 percentage points per year."[44] The study also examined net flows in and out of each asset class, and found the "shortfall, or gap, stems from inopportunely timed purchases and sales of fund shares, which cost investors nearly one sixth the return they would have earned if they had simply bought and held."[45]

Despite the persistent gap of 1.6 to 1.8 percentage points per year, the analysis uses allocation funds for working years that better represent TDFs and which Morningstar notes "are often used as core holdings for employer-sponsored retirement plans, such as 401(k)s." Thus, the pre-retirement behavioral drag is assumed to be 69 basis points (the behavioral drag for allocation funds), which is much lower than the overall figures. The 2014 study gave a thorough analysis of the variability of findings based on various amounts of behavioral drag.

The model does not include important additional differences between DB and DC plans, such as the "leakage" of assets from DC plans through loans or early withdrawals, two features which are rare in DB plans. Neither does the model analyze the effects of ups and downs in financial markets and the impact that these have on investment returns and costs in both DB and DC plans over a career. Also, the fact that in DC plans some individuals will have "better luck" with investing than others means that individuals' retirement prospects will exhibit a wider dispersion than what is predicted by the model. A 2012 Texas TRS plan design study, for instance, estimated that participants in an individually directed DC plan would have a 66 percent chance of having less than 62 percent of the benefit offered by the DB plan with the same contributions.[46]

Table A1: Capital Market Assumptions, Excluding Next 10 Years

Asset Class	Projected Long Term Returns	DB Plan	DC Plan Asset Allocation Glidepath by Age of Worker/Retiree									
			30	35	40	45	50	55	60	65	70	100
Public Equity	7.7%	46.5%	87%	85%	81%	76%	70%	64%	56%	49%	43%	0%
Fixed Income	4.4%	23.2%	8%	10%	14%	19%	25%	31%	39%	46%	52%	95%
Private Equity	10.2%	9.4%										
Real Estate	6.9%	8.9%										
Hedge Funds	6.0%	6.3%										
Cash	2.6%	2.4%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Commodities	4.6%	1.7%										
Misc. Alternatives	7.2%	1.5%										
Other	7.3%	0.1%										
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Net Return: Ideal DC		**6.80%**	**7.18%**	**7.11%**	**6.98%**	**6.81%**	**6.62%**	**6.42%**	**6.15%**	**5.92%**	**5.73%**	**4.31%**
Net Return: Individually Directed DC			**6.49%**	**6.42%**	**6.29%**	**6.12%**	**5.93%**	**5.73%**	**5.46%**	**4.24%**	**4.05%**	**2.63%**
Inflation Assumption	**2.31%**											

Table A2: Capital Market Assumptions, Including Next 10 Years

Asset Class	Projected Long Term Returns*	DB Plan	DC Plan Asset Allocation Glidepath by Age of Worker/Retiree									
			30	35	40	45	50	55	60	65	70	100
Public Equity	7.0%	46.5%	87%	85%	81%	76%	70%	64%	56%	49%	43%	0%
Fixed Income	2.5%	23.2%	8%	10%	14%	19%	25%	31%	39%	46%	52%	95%
Private Equity	8.7%	9.4%										
Real Estate	5.5%	8.9%										
Hedge Funds	5.2%	6.3%										
Cash	2.0%	2.4%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Commodities	4.4%	1.7%										
Misc. Alternatives	5.7%	1.5%										
Other	5.0%	0.1%										
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Net Return: Ideal DC		**5.68%**	**6.39%**	**6.30%**	**6.12%**	**5.90%**	**5.63%**	**5.36%**	**5.00%**	**4.68%**	**4.41%**	**2.48%**
Net Return: Individually Directed DC			**5.70%**	**5.61%**	**5.43%**	**5.21%**	**4.94%**	**4.67%**	**4.31%**	**3.00%**	**2.73%**	**0.80%**
Inflation Assumption	**2.10%**											

*Authors estimates based on Aon's assumptions for various asset classes.

Expected returns are using Aon's Q3 2021 Capital Market Assumptions (CMAs) as of 09/30/2021, which are projections about the future returns of asset classes. For asset classes that can be implemented passively, which includes most public assets, alpha and active management fees are not included in the return expectations. For asset classes that can only be implemented actively, such as hedge funds and private assets, we assume alpha and higher active manager fees. Expected returns are geometric (long-term compounded). Expected returns presented are models and do not represent the returns of an actual client account. Actual returns will be reduced by any advisory fees and other expenses a client may incur. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. Capital market assumptions disclosure pages are available from Aon upon request.

ENDNOTES

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2. The benefit factor could also be a function of a worker's earnings over their entire career (a so-called "career average plan.") Or, the factor could be a flat dollar amount: for example, the plan will pay a monthly benefit equal to $50 per year of service, so that a 30 year employee would have a benefit of $1,500 per month. "Flat dollar" plans are primarily seen among blue-collar workers in the private sector.
3. Inflation protection varies among DB pensions. Private DB pensions typically do not offer Cost of Living Adjustments, while public DB pensions usually offer some level of inflation protection.
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5. While not incorporated into our model, the lack of sufficient contributions can be a problem for DB plans and is a widespread problem for voluntary DC accounts. The median 401(k) contribution rate among participating workers was 5.2 percent in the early 2000s and stood at just 5 percent in 2010. (See Table 6, p. 44 in B.A. Butrica and K.E. Smith, 2012, "401(k) Participant Behavior in a Volatile Economy," CRR WP 12-24, Center for Retirement Research at Boston College, Chestnut Hill, MA.) Industry efforts to improve savings have increased the median contribution rate to 6.0 percent in 2020 (Vanguard How America Saves 2021) However, 27 percent of private sector wage and salary employees who have access to a 401(k) type plan do not participate (U.S. Bureau of Labor Statistics (BLS), 2018 National Compensation Survey Employee Benefit Survey, BLS, Washington, DC, http://www.bls.gov/ncs/ebs/benefits/2018/ownership/private/table02a.htm), with lower wage earners more likely to not participate (Vanguard How America Saves).
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Use by 401(k) Plan Participants https://www.ebri.org/docs/default-source/ebri-issue-brief/ebri_ib_537_401ktdfs-9sep21.pdf?sfvrsn=bf653b2f_4

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