

B. Program Ends

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Policy Type: TFFR Ends

Policy Title: Mission

The mission of TFFR, a trust fund, is to advocate for, develop, and administer a comprehensive retirement program for all trust fund members within the resources available.

TFFR Board Adopted: May 25, 1995.

Policy Type: TFFR Ends

Policy Title: Goals

Investment and Funding Goals:

1. Improve the Plan's funding status to protect and sustain current and future benefits.
2. Minimize the employee and employer contributions needed to fund the Plan over the long term.
3. Avoid substantial volatility in required contribution rates and fluctuations in the Plan's funding status.
4. Accumulate a funding surplus to provide increases in retiree annuity payments to preserve the purchasing power of their retirement benefits.

Service Goals:

1. Administer accurate, prompt, and efficient pension benefits program.
2. Deliver high quality, friendly service to members and employers.
3. Provide educational outreach programs including retirement education workshops and benefits counseling sessions.

TFFR Board Adopted: May 25, 1995.

Amended: August 29, 1996; March 6, 1998; September 23, 1999; January 25, 2001, September 21, 2006, March 15, 2012, September 22, 2016.

TFFR beneficiaries are:

1. **Plan Members:**

a. Active – all persons who are licensed to teach in North Dakota and who are contractually employed in teaching, supervisory, administrative, or extracurricular services:

- Classroom teachers
- Superintendents, assistant superintendents, county superintendents
- Business managers
- Principals and assistant principals
- Special teachers
- Superintendent of Public Instruction, professional employees of Dept. of Public Instruction and Dept. of Career and Technical Education, unless transferred to North Dakota Public Employees Retirement System (NDPERS)
- Professional or teaching staff of Center for Distance Education, Youth Correctional Center, School for the Blind and School for the Deaf.
- Other persons or positions authorized in state statutes

b. Annuitants – All persons who are collecting a monthly benefit:

- Retirees
- Disabilitants
- Survivors/Beneficiaries

c. Inactive members:

- Vested
- Nonvested

2. **Employers:**

- a. School districts, special education units, vocational centers, County superintendents, Regional Education Associations (REA)
- b. State institutions and agencies defined in state statutes
- c. Other TFFR participating employers

TFFR Board Adopted: May 25, 1995.

Amended: July 27, 2000; July 24, 2003, September 20, 2007

Introduction

The purpose of this Actuarial Funding Policy is to record the funding objectives and policy set by the Board of Trustees (Board) for the North Dakota Teachers' Fund for Retirement (TFFR). Effective with the July 1, 2013 actuarial valuation, the Board establishes this Actuarial Funding Policy to help ensure the systematic funding of future benefit payments for members of TFFR. The contributions made to TFFR are set by statute. These statutory contributions will be compared to the contributions determined under the funding policy in order to assess the appropriateness of the statutory contributions. Based upon this comparison, the Board will decide what action to take, if any. The employer contribution determined under the funding policy is called the actuarially determined employer contribution (ADEC). In addition, this document records certain guidelines established by the Board to assist in administering TFFR in a consistent and efficient manner.

This Actuarial Funding Policy supersedes any previous Actuarial Funding Policies and may be modified as the Board deems necessary.

Goals of Actuarial Funding Policy

1. To achieve long-term full funding of the cost of benefits provided by TFFR;
2. To seek reasonable and equitable allocation of the cost of benefits over time;
3. To maintain a policy that is both transparent and accountable to the stakeholders of TFFR, including plan participants, employers, and residents of the State of North Dakota.

Actuarially Determined Employer Contribution and Funding Policy Components

TFFR's actuarially determined employer contribution is comprised of the Normal Cost and an amortization of the Unfunded Actuarial Accrued Liability (UAAL). The Normal Cost and the amortization of the UAAL are determined by the following three components of this funding policy:

- I. Actuarial Cost Method: the techniques to allocate the cost/liability of retirement benefits to a given period;
- II. Asset Smoothing Method: the techniques that spread the recognition of investment gains or losses over a period of time for the purposes of determining the Actuarial Value of Assets used in the actuarial valuation process; and
- III. Amortization Policy: the decisions on how, in terms of duration and pattern, to reduce the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets in a systematic manner.

I. Actuarial Cost Method:

The Entry Age Normal method shall be applied to the projected benefits in determining the Normal Cost and the Actuarial Accrued Liability. The Normal Cost shall be determined as a level percentage of pay on an individual basis for each active member.

II. Asset Smoothing Method:

The investment gains or losses of each valuation period, as a result of comparing the actual market return to the expected market return, shall be recognized in level amounts over 5 years in calculating the Actuarial Value of Assets. Deferred investment gains or losses cannot exceed 20% of the Market Value of Assets (i.e., the Actuarial Value of Assets cannot be more than 120%, nor less than 80%, of the Market Value of Assets as of any valuation date).

III. Amortization Policy:

- The UAAL, (i.e., the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets), as of July 1, 2013, shall be amortized over a “closed” 30-year period. In other words, the UAAL as of July 1, 2014 shall be amortized over 29 years, the UAAL as of July 1, 2015 shall be amortized over 28 years, etc.
- Beginning with the July 1, 2024 valuation, the Board shall have the discretion to continue the “closed” amortization period, or instead to amortize the UAAL over another period, not to exceed 20 years.
- Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period equal to the amortization period of the UAAL. The Board shall have the discretion to amortize the new UAAL as a result of change in actuarial assumptions or methods over a period of 20 years.
- Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis, the increase in UAAL as a result of any plan amendments will be amortized over a period not to exceed 20 years.
- In a situation where the amortization of the UAAL has more than one component, a single equivalent amortization period will be determined by the Actuary.
- UAAL shall be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase.
- If an overfunding exists (i.e., the UAAL becomes negative so that there is a surplus), such surplus and any subsequent surpluses will be amortized over an “open” amortization period of 30 years. Any subsequent UAAL will be amortized over 20 years as the first of a new series of closed period UAAL amortization.

Actuarial Assumptions Guidelines

The actuarial assumptions directly affect only the timing of contributions; the ultimate contribution level is determined by the benefits and the expenses actually paid offset by actual investment returns. To the extent that actual experience deviates from the assumptions, experience gains and losses will occur. These gains (or losses) then serve to reduce (or increase) the future contribution requirements.

Actuarial assumptions are generally grouped into two major categories:

- Demographic assumptions – including rates of termination, retirement, disability, mortality, etc.
- Economic assumptions – including investment return, salary increase, payroll growth, inflation, etc.

The actuarial assumptions are described in detail in the actuarial valuation report. They represent the Board's best estimate of anticipated experience under TFFR and are intended to be long term in nature. Therefore, in developing the actuarial assumptions, the Board considers not only past experience but also trends, external forces and future expectations.

Actuarial experience studies are completed every five years or at the Board's direction.

Glossary of Funding Policy Terms

- **Present Value of Benefits (PVB) or total cost:** the “value” at a particular point in time of all projected future benefit payments for current plan members. The “future benefit payments” and the “value” of those payments are determined using actuarial assumptions as to future events. Examples of these assumptions are estimates of retirement patterns, salary increases, investment returns, etc. Another way to think of the PVB is that if the plan has assets equal to the PVB and all actuarial assumptions are met, then no future contributions would be needed to provide all future service benefits for all current members, including future service and salary increases for current active members.
- **Actuarial Cost Method:** allocates a portion of the total cost (PVB) to each year of service, both past service and future service.
- **Normal Cost:** the cost allocated under the Actuarial Cost Method to each year of active member service.
- **Entry Age Normal Actuarial Cost Method:** A funding method that calculates the Normal Cost as a level percentage of pay or level dollar amount over the working lifetime of the plan's members.

Policy Type: TFFR Ends

Policy Title: Actuarial Funding Policy Statement

- **Actuarial Accrued Liability (AAL):** the value at a particular point in time of all past Normal Costs. This is the amount of assets the plan would have today if the current plan provisions, actuarial assumptions and participant data had always been in effect, contributions equal to the Normal Cost had been made and all actuarial assumptions came true.
- **Market Value of Assets (MVA):** the fair value of assets of the plan as reported in the plan's audited financial statements.
- **Actuarial Value of Assets (AVA):** the market value of assets less the deferred investment gains or losses not yet recognized by the asset smoothing method.
- **Unfunded Actuarial Accrued Liability (UAAL):** the portion of the AAL that is not currently covered by the AVA. It is the positive difference between the AAL and the AVA.
- **Surplus:** the positive difference, if any, between the AVA and the AAL.
- **Actuarial Value Funded Ratio:** the ratio of the AVA to the AAL.
- **Market Value Funded Ratio:** the ratio of the MVA to the AAL.
- **Actuarial Gains and Losses:** changes in UAAL or surplus due to actual experience different from what is assumed in the actuarial valuation. For example, if during a given year the assets earn more than the investment return assumption, the amount of earnings above the assumption will cause an unexpected reduction in UAAL, or "actuarial gain" as of the next valuation. These include contribution gains and losses that result from actual contributions made being greater or less than the level determined under the policy.
- **Valuation Date:** July 1 of every year.

TFFR Board Adopted: March 21, 2013

1. PLAN CHARACTERISTICS AND FUND CONSTRAINTS.

The North Dakota Teachers' Fund for Retirement (TFFR) is a pension benefit plan that was established in 1913 to provide retirement income to all public school and certain state teachers and administrators in the state of North Dakota. The plan is administered by a seven member Board of Trustees comprised of five active and retired members of the fund appointed by the Governor of North Dakota and two elected officials - the State Treasurer and the State Superintendent of Public Instruction.

The plan is a multi-employer defined benefit public pension plan that provides retirement, disability, and death benefits in accordance with Chapter 15-39.1 of the North Dakota Century Code (NDCC). Monthly retirement benefits are based on the formula: Number of Years of service X 2.0% X Final Average Salary. Adjustments to the basic formula are made depending on the retirement option selected.

Funding is provided by monthly employee and employer contributions scheduled to increase as follows:

	7/1/11	7/1/12	7/1/14
Employee	7.75%	9.75%	11.75%
Employer	8.75%	10.75%	12.75%

Employee and employer contributions will be reduced to 7.75% each when TFFR reaches 100% funded level on an actuarial value basis.

The TFFR Board has an actuarial valuation performed annually and an Experience Study and Asset Liability Study performed every five years. The actuarial assumed rate of return on assets was reduced to 7.75% from 8.0% as of July 1, 2015. Key plan and financial statistics are recorded in the most recent valuation report on file at the North Dakota Retirement and Investment office (RIO).

2. FUND GOALS

The Plan benefits are financed through both statutory employer and employee contributions and the investment earnings on assets held in the Fund. The TFFR Board recognizes that a sound investment program is essential to meet the pension obligations.

As a result, the Fund goals are to:

- Improve the Plan's funding status to protect and sustain current and future benefits.
- Minimize the employee and employer contributions needed to fund the Plan over the long term.

- Avoid substantial volatility in required contribution rates and fluctuations in the Plan's funding status.
- Accumulate a funding surplus to provide increases in retiree annuity payments to preserve the purchasing power of their retirement benefit.

The Board acknowledges the material impact that funding the pension plan has on the State/School District's financial performance. These goals affect the Fund's investment strategies and often represent conflicting goals. For example, minimizing the long-term funding costs implies a less conservative investment program, whereas dampening the volatility of contributions and avoiding large swings in the funding status implies a more conservative investment program. The Board places a greater emphasis on the strategy of improving the funding status and reducing the contributions that must be made to the Fund, as it is most consistent with the long-term goal of conserving money to apply to other important state/local projects.

3. RESPONSIBILITIES AND DISCRETION OF THE STATE INVESTMENT BOARD (SIB).

The TFFR Board is charged by law under NDCC 21-10-02.1 with the responsibility of establishing policies on investment goals and asset allocation of the Fund. The SIB is charged with implementing these policies and investing the assets of the Fund in the manner provided in NDCC 21-10-07, the prudent investor rule. Under this rule, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, not in regard to speculation but in regard to the permanent disposition of funds, considering probable safety of capital as well as probable income. The Fund must be invested exclusively for the benefit of the members and their beneficiaries in accordance with this investment policy.

Management responsibility for the investment program not assigned to the SIB in Chapter 21-10 of the North Dakota Century Code (NDCC) is hereby delegated to the SIB, who must establish written policies for the operation of the investment program, consistent with this investment policy.

The SIB may delegate investment responsibility to professional money managers. Where a money manager has been retained, the SIB's role in determining investment strategy and security selection is supervisory, not advisory

At the discretion of the SIB, the Fund's assets may be pooled with other funds. In pooling funds, the SIB may establish whatever asset class pools it deems necessary with specific quality, diversification, restrictions, and performance objectives appropriate to the prudent investor rule and the objectives of the funds participating in the pools.

The SIB is responsible for establishing criteria, procedures, and making decisions with respect to hiring, keeping, and terminating money managers. SIB investment responsibility also includes selecting performance measurement services, consultants, report formats, and frequency of meetings with managers.

The SIB will implement changes to this policy as promptly as is prudent.

4. RISK TOLERANCE

The Board is unwilling to undertake investment strategies that might jeopardize the ability of the Fund to finance the pension benefits promised to plan participants.

However, funding the pension promise in an economical manner is critical to the State/School Districts ability to continue to provide pension benefits to plan participants. Thus, the Board actively seeks to lower the cost of funding the Plan's pension obligations by taking on risk for which it expects to be compensated over the long term. The Board understands that a prudent investment approach to risk taking can result in periods of under-performance for the Fund in which the funding status may decline. These periods, in turn, can lead to higher required contribution rates. Nevertheless, the Board believes that such an approach, prudently implemented, best serves the long-run interests of the State/School District and, therefore, of plan participants.

5. INVESTMENT OBJECTIVES

The Board's investment objectives are expressed in terms of reward and risk expectations relative to investable, passive benchmarks. The Fund's policy benchmark is comprised of policy mix weights of appropriate asset class benchmarks as set by the SIB

- 1) The fund's rate of return, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.
- 2) The fund's risk, measured by the standard deviation of net returns, should not exceed 115% of the policy benchmark over a minimum evaluation period of five years

- 3) The risk adjusted performance of the fund, net of fees and expenses, should at least match that of the policy benchmark over a minimum evaluation period of five years.

6. POLICY ASSET MIX

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. After consideration of all the inputs and a discussion of its own collective risk tolerance, the Board approves the appropriate policy asset mix for the Fund.

Asset Class	Policy Target (%)	Rebalancing Range (%)
Global Equity	58	46-65
Public Equity	52	44-60
U.S.	29	23-35
Global ex-U.S.	23	18-28
Private Equity	6	4-8
Global Fixed Income	23	16-30
Investment Grade	19	14-24
Non-Investment Grade	4	2-6
Global Real Assets	18	12-24
Global Real Estate	10	5-15
Other	8	0-12
Infrastructure		0-10
Timber		0-5
Commodities		0-5
Inflation Linked-Bonds		0-10
Other Inflation Sensitive Strategies		0-5
Global Alternatives		0-10
Cash	1	0-2

While the Board recognizes fluctuations in market values will lead to short-term deviations from policy targets, the Board does not intend to engage in tactical asset allocation. Allocations to Global Alternatives will result in pro-rata reduction in the policy targets.

7. RESTRICTIONS

While the SIB is responsible for establishing specific quality, diversification, restrictions, and performance objectives for the investment vehicles in which the Fund's assets will be invested, it is understood that:

- a. Futures and options may be used to hedge or replicate underlying index exposure, but not for speculation.
- b. Derivatives use will be monitored to ensure that undue risks are not taken by the money managers
- c. No transaction shall be made which threatens the tax exempt status of the Fund.
- d. All assets will be held in custody by the SIB's master custodian or such other custodians as are acceptable to the SIB.
- e. No unhedged short sales or speculative margin purchases shall be made.
- f. Social investing is prohibited unless it meets the Exclusive Benefit Rule and it can be substantiated that the investment must provide an equivalent or superior rate of return for a similar investment with a similar time horizon and similar risk.

For the purpose of this document, Social Investing is defined as
“The investment or commitment of public pension fund money for the purpose of obtaining an effect other than a maximized return to the intended beneficiaries.”

- g. Economically targeted investing is prohibited unless the investment meets the Exclusive Benefit Rule.

For the purpose of this document economically targeted investment is defined as an investment designed to produce a competitive rate of return commensurate with risk involved, as well as to create collateral economic benefits for a targeted geographic area, group of people, or sector of the economy.

Also, for the purpose of this document, the Exclusive Benefit Rule is met if the following four conditions are satisfied:

- 1) The cost does not exceed the fair market value at the time of investment.

- 2) The investment provides the Fund with an equivalent or superior rate of return for a similar investment with a similar time horizon and similar task
- 3) Sufficient liquidity is maintained in the Fund to permit distributions in accordance with the terms of the plan.
- 4) The safeguards and diversity that a prudent investor would adhere to are present.

Where investment characteristics, including yield, risk, and liquidity are equivalent, the Board's policy favors investments which will have a positive impact on the economy of North Dakota.

8. INTERNAL CONTROLS

A system of internal controls must be in place by the SIB to prevent losses of public funds arising from fraud or employee error. Such controls deemed most important are the separation of responsibilities for investment purchases from the recording of investment activity, custodial safekeeping, written confirmation of investment transactions, and established criteria for broker relationships. The annual financial audit must include a comprehensive review of the portfolio, accounting procedures for security transactions and compliance with the investment policy.

9. EVALUATION AND REVIEW

Investment management of the Fund will be evaluated against the Fund's investment objectives. Emphasis will be placed on five year results. Evaluation should include an assessment of the continued feasibility of achieving the investment objectives and the appropriateness of the Investment Policy Statement for achieving those objectives.

Performance reports will be provided to the TFFR Board periodically, but not less than annually. Such reports will include asset returns and allocation data as well as information regarding all significant and/or material matters and changes pertaining to the investment of the Fund, including but not limited to:

- 1) A list of the advisory services managing investments for the board.
- 2) A list of investments at market value, compared to previous reporting period, of each fund managed by each advisory service.

Policy Type: TFFR Ends

Policy Title: Investment Policy Statement

- 3) Earnings, percentage earned, and change in market value of each fund's investments.
- 4) Comparison of the performance of each fund managed by each advisory service to other funds under the board's control and to generally accepted market indicators.
- 5) All material legal or legislative proceedings affecting the SIB.
- 6) Compliance with this investment policy statement.

TFFR Board Adopted: May 25, 1995.

Amended: November 30, 1995; August 21, 1997; July 15, 1999; July 27, 2000; September 18, 2003; July 14, 2005; September 21, 2006; September 20, 2007; October 27, 2011, September 26, 2013, January 21, 2016.

Approved by SIB: November 18, 2011, February 26, 2016

ND Teachers' Fund For Retirement

ND State Investment Board

Date: 1-28-16

Date: 2-26-16

Fay Kopp

Fay Kopp
Chief Retirement Officer

David J Hunter

David J Hunter
Chief Investment Officer

Policy Type: TFFR Ends

Policy Title: Membership Data and Contributions

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

Accordingly, the administrative means will be to:

1. Retain member documents applicable to the retirement program.
2. Safeguard TFFR database files.
3. Protect the confidential information contained in member files.
4. Collect the member and employer contributions from the employers based on retirement salary earned by the member.
5. Monitor the employer reporting process including the timely filing of information, consistency of month-to-month data, and changes in the employer payment plan models.
6. Review the individual member data, salary, and service credit for accuracy.
7. Post and validate the data received from the employer to the individual accounts.
8. Mail annual statements to every member.
9. Summarize the teacher data reported and notify the employers of the year-to-date information.
10. Ensure that individuals employed as "teachers" in North Dakota school districts, political subdivisions, and state institutions are reported to TFFR in compliance with the North Dakota Century Code (NDCC).
11. Provide publications and reporting instructions to employers on TFFR.
12. Transfer member and employer contributions to the investment program in a timely manner.

Policy Type: TFFR Ends

Policy Title: Membership Data and Contributions

Monitoring (Method, Responsibility, Frequency)

1. Internal Report
 - a. Disclosure of compliance to the board from RIO's internal auditors. The Internal Audit (IA) program is designed to review participating employers on an eight-year cycle.
 - b. Compliance for individual accounts is monitored through internal audits of staff compliance with state laws, rules, board policy, and procedures.
2. External Report
 - a. Disclosure of compliance to the board by RIO's external auditors as a part of the annual audit.
 - b. Disclosure of compliance to members through annual statements.

TFFR Board Adopted: May 25, 1995.

Amended: July 18, 2002, September 20, 2007, September 22, 2016.

Policy Type: TFFR Ends

Policy Title: Member Services

Provide direct services and public information to members of TFFR.

Accordingly, the administrative means will be to:

1. Enroll, update, maintain, and certify all member accounts.
2. Respond to member inquiries on the retirement program.
3. Provide statewide benefits counseling services to members.
4. Make group presentations and distribute information at conferences and conventions throughout the state.
5. Coordinate and conduct retirement education programs for members on a statewide basis.
6. Certify eligibility for TFFR benefits and purchase of service credit.
7. Calculate and process claims for refund, retirement, disability, survivor, and Qualified Domestic Relations Order (QDRO) benefits, as well as claims for purchasing credit.
8. Permit members to change designated beneficiaries in the event of life occurrences identified in the administrative rules.
9. Close retirement accounts of deceased teachers.
10. Develop and distribute information to the members on the retirement program and related topics through newsletters, annual reports, member handbooks, brochures, and retirement planning materials.
11. Maintain a website and provide online services to provide members with a variety of access methods for TFFR information.

Policy Type: TFFR Ends

Policy Title: Member Services

Monitoring (Method, Responsibility, Frequency)

1. Internal Report
 - a. Disclosure of compliance to the board through internal audits on compliance with laws, rules, and policies.
 - b. Periodic presentations by staff at board meetings.
2. External Report
 - a. Receive annual reports from leadership of groups representing the plan's beneficiaries.
 - b. RIO's annual audit by independent auditor.
 - c. Written and oral communication with board members from teachers regarding payment and processing of benefit claims.

TFFR Board Adopted: May 25, 1995.

Amended: July 27, 2000; July 24, 2003, September 20, 2007, September 22, 2016.

Policy Type: TFFR Ends

Policy Title: Account Claims

Ensure the payment of claims to members of TFFR.

Accordingly, the administrative means will be to:

1. Pay retirement benefits based on a presumed final salary for members retiring upon completion of their teaching contract and whose final salary has not been reported to TFFR.
2. Allow teachers receiving an annuity from TFFR to have payroll deductions subtracted from their monthly benefit, including, but not limited to: health, life, and other insurance premiums payable to NDPERS, North Dakota Retired Teachers Association (NDRTA) dues, North Dakota United (ND United) Retired dues, and federal and North Dakota income tax withholdings.
3. Distribute payments for benefit claims (annuities, PLSOs, refunds, and rollovers) once per month. Distributions including payments made by Electronic Funds Transfer (EFT) will be mailed on the last working day of the previous month payable on the first working day of each month.
4. Distribute special payments for benefit claims in the event of unforeseen circumstances (i.e. death, QDRO, Court Order).
5. Send new account notices and account change notices to retired members.

Monitoring (Method, Responsibility, Frequency)

- Internal Report
 - Disclosure of compliance to the board through internal audits on compliance with laws, rules, and policies.
 - Periodic presentations by staff at board meetings.
- External Report
 - Disclosure of compliance to the board through annual audit by RIO auditors.

TFFR Board Adopted: May 25, 1995.

Amended: July 27, 2000; July 24, 2003.

Policy Type: TFFR Ends

Policy Title: Trust Fund Evaluation/Monitoring

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 be executed by the Deputy Executive Director/ Chief Retirement Officer.

Accordingly, the administrative means will be to:

1. Have an annual actuarial valuation (July 1 to June 30) performed on the retirement program. The valuation must be performed by an independent actuary who is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems. The valuation must be prepared in accordance with principles of practice prescribed by the Actuarial Standards Board. The calculations must be performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the system.
2. Have an actuarial review or audit of TFFR's actuarial valuation performed at least every five years by an independent actuary. The review should include an evaluation by an independent actuary, other than the one who performs the plan's actuarial valuation, for the purposes of expressing an opinion on the reasonableness or accuracy of the actuarial assumptions, actuarial cost methods, valuation results, contribution rates and certifications as described above. If there is a change in actuaries, a full replication of the previous actuarial valuation should be conducted and will serve as an actuarial audit.
3. Have an actuarial experience study performed on TFFR every five years. The experience study should include a review of demographic and economic assumptions and compare to actual experience. The study should analyze plan experience relating to assumed rates of mortality, disability, retirement, employment turnover, investment returns and other cost factors.
4. Have an asset liability study performed on TFFR every five years. The study should identify the optimal distribution of funds among the various asset classes that offers the highest probability of consistently achieving investment objectives within the confines of a predetermined level of risk. Projected changes in active and retired membership should also be considered.
5. Prepare financial statements in accordance with generally accepted accounting principles for defined benefit public pension plans.
6. Have a financial audit conducted annually in accordance with generally accepted auditing standards (as established by the AICPA) by an independent auditor.

Policy Type: TFFR Ends

Policy Title: Trust Fund Evaluation/Monitoring

7. Receive an unqualified opinion by the independent auditor regarding the audited financial statements.
8. Perform internal audits on the retirement program which provide the board with reasonable assurance that TFFR is being administered in compliance with federal and state laws, administrative rules, board policy, and established procedures.

Monitoring (Method, Responsibility, Frequency)

- Internal Report
 - Disclosure of compliance to the Board through periodic presentations by staff at Board meetings.
- External Report
 - Disclosure of compliance to the Board through annual audit and actuarial reports.

TFFR Board Adopted: May 25, 1995.

Amended: July 27, 2000, September 23, 2010. September 24, 2015

Exhibit B-I

Plan Characteristics

The Teachers' Fund for Retirement (TFFR) was established in 1913 to provide retirement income to public educators. TFFR is a qualified defined benefit public pension plan covered under Section 401(a) of the Internal Revenue Code (IRC). The NDCC Chapter 15-39.1 contains the actual language governing the Fund and is supplemented by Title 82 of the North Dakota Administrative Code (NDAC).

The 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 benefits program is administered through the Retirement and Investment Office (RIO) according to this Statement of Retirement Policy.

TFFR's funds are invested under the direction of the State Investment Board (SIB) following the "Prudent Investor Rule." The investments must be invested exclusively for the benefit of the TFFR members. Four of the TFFR Board members serve as voting members on the 11-member SIB.

TFFR Board Adopted: May 25, 1995.

Amended: July 1, 1997, September 23, 2010.

Exhibit B-II

Teachers' Fund for Retirement Responsibilities

1. Establish policies for the administration of the TFFR programs.
2. Submit legislation, monitor the statutory responsibilities of the TFFR programs as outlined in the NDCC, and promulgate Administrative Rules.
3. Establish and monitor actuarial assumptions used to value the retirement plan and to conduct periodic valuations.
4. Establish and monitor retirement benefit and service program goals.
5. Establish and monitor policy for investment goals, objectives, and asset allocation for the Fund.
6. Communicate and monitor program expectations with the SIB.

TFFR Board Adopted: May 25, 1995.

Exhibit B-III

SIB Responsibilities

To provide the staff and resources to carry out the *Ends* of the retirement program through RIO.

TFFR Board Adopted: May 25, 1995.

Exhibit B-IV

Asset Allocation Definitions

Overview of Asset Class Definitions

There are three major asset classes:

1. **Equity**
2. **Debt**
3. **Real Assets** (or Other)

Alternative Investments are often cited as the fourth major asset class, but can frequently be re-classified into one of the other three categories with some exceptions (i.e. total return strategies using debt and equity).

Equity investments represent an ownership claim on the residual assets of a company after paying off debt.

Equities should be segregated into two major sectors, Public and Private, given major differences in liquidity:

1. Public equities are generally highly liquid and *valued on a daily basis* in the financial markets. Examples include common stock (Apple, Coca-Cola or McDonalds), options and futures.
2. Private equities are generally less liquid and often *valued on a less frequent basis* (monthly or quarterly). Major private equity firms include Apollo, Bain, Blackstone, Carlyle, KKR and TPG.

Public equity markets are often sub-classified by geographic region (U.S., International or Global), market capitalization (Large, Medium or Small), investment style (core, growth or value) and level of economic development (developed or emerging markets). The top U.S. and global equity benchmarks are discussed below.

Five major U.S. equity benchmarks include the **S&P 500**, **Russell 1000**, **2000** and **3000**, and **Dow Jones Industrial Average ("Dow")**. The **S&P 500** is based on the [market capitalizations](#) of 500 large companies having common stock listed on the [NYSE](#) or [NASDAQ](#). The **Russell 1000** represents the highest-ranking 1,000 stocks in the [Russell 3000 Index](#), and represents about 90% of the total market capitalization of that index. The Russell 1000 has a weighted average market capitalization of over \$100 billion with a median of approximately \$8 billion. The **Russell 2000 Index** is a small-cap index and represents the bottom 2,000 stocks in the [Russell 3000 Index](#). The Russell 2000 has a weighted average market capitalization of less than \$2 billion with a median of less than \$1 billion. The Russell 2000 is the most common benchmark for [funds](#) that identify themselves as "[small-cap](#)", while the **S&P 500** index is used primarily for large capitalization stocks. The **Dow** is a price-weighted measure of 30 U.S. blue-chip companies. **The Dow** covers all industries with the exception of transportation and utilities, which are covered by the Dow Jones Transportation Average and Dow Jones Utility Average. While stock selection is not governed by quantitative rules, a stock

typically is added to The Dow only if the company has an excellent reputation, demonstrates sustained growth and is of interest to a large number of investors. Maintaining adequate sector representation within the indices is also a consideration in the selection process.

The **MSCI All Country World Index** (or “ACWI”) measures the equity market performance of developed and emerging markets and consists of 46 country indexes comprising 23 developed and 23 emerging market country indexes. The developed market countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. The emerging market countries are listed below. The **MSCI EAFE Index (Europe, Australasia, Far East)** measures the equity market performance of the developed market countries, excluding the US & Canada. The **MSCI Emerging Markets Index** measures equity market performance of emerging markets and consists of the following 23 countries: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates. On June 2, 2014, Greece was moved to the Emerging Markets from the Developed Markets, while Qatar and United Arab Emirates were added to the Emerging Markets.

Public equity has historically provided **high investment returns with high volatility and high liquidity when compared to Bonds or Real Assets**. Currently, many investment consultants believe that Private Equity will provide an even higher investment return than Public Equity, albeit with higher volatility and less liquidity.

Debt represents a legal obligation between a borrower and a lender for a stated period of time and rate.

Debt or “Bonds” are classified as fixed or floating depending upon whether the interest rate is derived using a fixed rate (i.e. 5%) or a floating rate (i.e. Prime + 1.00%). Duration risk within fixed income is a major driver of investment risk and return particularly for longer term securities, including U.S. Treasury bonds.

Debt is often sub-classified into investment grade (rated BBB- or better) or non-investment grade (rated less than BBB- or non-rated) or by geographic region (U.S., International, Developed Markets or Emerging Markets). Debt can be issued by governments, agencies or companies and represent general obligations of the issuer or be backed by a specified pool of assets (i.e. mortgage backed securities). Bonds serve to diversify a portfolio by offering **lower volatility** than equities along with a **lower expected return and generally high liquidity**.

Real Assets represent an ownership interest in physical assets such as real estate, infrastructure (airports, toll roads), timberland and commodities (gold, oil, wheat). Real assets are expected to provide inflation hedging characteristics in periods of unanticipated inflation and diversify a portfolio consisting of debt and equity.

Alternative Investments can include precious metals, art, antiques, and financial assets such as derivatives, commodities, private equity, distressed debt and hedge funds. Real estate and forestry are also often termed alternative. Alternatives are sometimes used as a tool to reduce overall

investment risk through **diversification** and may offer lower **correlation** with traditional financial investments such as stocks and bonds, although it may be difficult to determine the current market value of the asset, may be **illiquid**, purchase and sales costs may be high, and there may be limited historical risk and return data, all of which makes analysis complex.

Global Equity

Definition

Investment represents an ownership claim on the residual assets of a company after the discharge of all senior claims such as secured and unsecured debt.

Public Equity

Public equity is traded on a national exchange. Includes common stock, preferred stock, convertible to stock, options, warrants, futures and other derivatives on equities or composites of equities, exchange-traded funds and equity-linked notes, units and partnership shares representing ownership interests in an underlying equity investment.

Private Equity

Private equity represents equity or equity linked securities in operating companies that are not publicly traded on a stock exchange.

Types of investment strategies:

- *Leveraged buyout (LBO)* – Acquisition of a company with the use of financial leverage
- *Growth capital* – Investment in mature companies looking for capital to expand, restructure, enter new markets
- *Venture capital* – Investment in typically less mature companies, for launch, early development, or expansion
- *Mezzanine* – Subordinated debt/preferred equity used to reduce amount of equity capital required to finance LBOs
- *Distressed* – Equity securities of financially stressed companies
- *Secondaries* – Investment in existing private equity assets

Types of structures:

- *Direct investment* – Direct purchase of equity securities of a private company
- *Co-investments* – Investments in equity securities of a private company alongside the manager of a direct fund
- *Direct fund* – Pool of capital formed to make direct investments
- *Fund-of-funds* – Pool of capital formed to make investments in direct funds

Strategic Role

- High long-term real returns
- Hedge against active (pre-retirement) liabilities
- Private equity enhances total portfolio return as a tradeoff for illiquidity

Characteristics

Public Developed Markets

- Relatively high returns (long-term) as compared to fixed income and real assets.
- Relatively high volatility (standard deviation of returns) as compared to fixed income and real assets
- Relatively high liquidity
- Diversification
- Historically, public developed equities exhibit high correlation with private equity and high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- Currency adds to volatility but can be hedged, which mutes the diversification benefits.

Public Emerging Markets

- Higher expected returns due to economic growth potential
- Liquidity risk is significant, particularly in frontier markets.
- High volatility, particularly in frontier markets
- Historically, public emerging equities exhibit high correlation with high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- FX markets not sufficiently developed to hedge currency risk
- Limited access to markets
- Market information less abundant than for developed markets
- Counterparty risk and settlement delays pronounced in frontier markets

Private Equity

- Illiquid, long-term time horizon (7-12 year closed-end partnerships)
- Quality of the managers selected is the key determinant of success.
- High volatility of returns compensated by higher expected returns
- Historically, public emerging equities exhibit high correlation with high yield bonds, moderate correlation with investment grade corporate bonds and real assets, and negative correlation with sovereign debt.
- Encompasses three stages: fundraising, portfolio construction and investment, exit and return realization

Risks

Public Equity

- *Absolute risk* – Possible magnitude of price decline
- *Liability hedging risk* – Risk that assets will not increase when liabilities increase
- *Regulatory risk* – Changes may adversely affect markets
- *Tax risk* – Changes may adversely affect markets
- *Liquidity risk* – Difficulty trading securities under adverse market conditions
- *Firm specific risk* – Unique risks associated with a specific firm
- *Tracking risk* – Magnitude of performance deterioration from a benchmark
- *Time horizon* – Horizon too short to weather cycles
- *Benchmark risk* – Benchmark not appropriate proxy
- *Market risks* – Price decline
- *Currency risk* – Unanticipated changes in exchange rate between two currencies
- *Counterparty risk* – Counterparty does not live up to its contractual obligations

Private Equity

- *Liquidity risk* – Absence of liquidity and appropriate exits could significantly increase time horizon
- *Firm specific risk* – Unique risks associated with a specific firm
- *Leverage risk* – Historical excess use of leverage and current inability to secure financing may adversely affect LBOs
- *Manager selection risk* – Selecting managers that fail to deliver top performance results
- *Diversification risk* – Inability to properly diversify the portfolio by vintage year, industry groups, geography
- *Tax risk* – Changes may adversely affect markets
- *Regulatory risk* – Changes may adversely affect markets
- *Strategy risk* – Continuing applicability of investment strategy in context of capital flows
- *Market risks* – Price decline

Global Fixed Income

Definition

Investment represents a legal obligation between a borrower and the lender with a maturity in excess of one year. Evidence of indebtedness and securities that evidence an ownership interest in debt obligations that are issued, insured, guaranteed by, or based on the credit of the following: companies, governmental entities or agencies, banks and insurance companies. Includes agency and non-agency mortgage-backed securities, collateralized mortgage obligations, commercial mortgage-backed securities, asset-backed securities, private placements, and options, futures or other derivatives on fixed income securities or components of fixed income.

Strategic Role

- Diversification within a multi-asset class, total return portfolio
- Hedge against a long duration accrued liability
- Current income
- Non-U.S. provides hedge against unanticipated domestic inflation and diversification to U.S. assets

Characteristics

- Medium volatility asset class
- Relatively high liquidity
- Broadly diversified by market sector, quality, and maturity
- Historically, developed sovereign debt exhibits low to negative correlation with real assets and negative correlation with equities; investment grade corporate bonds exhibit moderate correlation with equities and low correlation with real assets; high yield exhibits high correlation with equities and moderate correlation with real assets.
- A large currency component exists within international fixed income returns.
- Developed markets are extremely liquid. Many issues of less developed markets are also relatively liquid.

Risks

- *Duration risk* – Price volatility from a change in overall interest rates
- *Convexity risk* – Negative convexity is the risk of price declines being greater than the price increase due to interest rates moving equally up versus down.
- *Default or credit risk* – The uncertainty surrounding the borrower's ability to repay its obligations
- *Structure risk* – Risk that arises from the options implicit in bonds (like call ability and sinking funds) or the rules that govern cash flow differ from expectations
- *Sector risk* – Risk of holding sectors that are in different proportions than the benchmark

- *Liquidity risk* – Cost of trading in a security which is reflected in the bid-ask spread or the cost of selling due to cash flow needs
- *Reinvestment risk* – The uncertainty surrounding future yield opportunities to invest funds which come available due to call, maturities, or coupon payments
- *Benchmark risk* – Risk of the benchmark being inappropriate
- *Yield curve risk* – Price changes induced by changes in the slope of the yield curve
- *Currency risk* – The risk of currency movements vs. the dollar for each market. Currency may contribute greatly to return and lower correlation.

Global Real Assets

Definition

Investment represents an ownership interest in real return assets that provide inflation hedging characteristics in periods of unanticipated inflation. Includes inflation-linked securities, private or public real estate equity or equity-linked investments, private or public real estate debt, infrastructure, timber, real asset mezzanine debt or equity, non-fixed assets and other opportunistic investments in real assets.

Strategic Role

- Reduces risk of composite multi-asset portfolios through diversification
- Relatively low correlations to traditional asset classes
- Can serve as a possible inflation hedge during periods of high inflation
- Provides an attractive return relative to fixed income asset class in periods of low to moderate inflation
- Infrastructure provides inflation protection as the revenues of the underlying assets are typically linked to CPI
- Potential for high returns in niche opportunities

Characteristics

Real Estate

- *Risk* – Volatility of private real estate falls between publicly-traded debt and publicly-traded equities
- *Returns* – Nominal returns are expected to fall between equities and fixed income
- *Correlation* – Expected to exhibit low to no correlation with government and investment grade corporate bonds, and moderate correlation with high yield and equities
- *Illiquidity* – Transactions require a significantly longer period to execute than other asset classes.
- *Inefficient Market* – Information affecting real estate asset valuation and market trading is not rapidly, accurately, or efficiently reflected or interpreted in its pricing.

Infrastructure

- *Long life assets* – Capital intensive assets with 25 to 99 year concessions, match for liability duration
- *Inflation protection* – Revenues typically linked to CPI
- *Monopoly or quasi monopoly* – High barriers to entry due to scale and capital cost
- *Steady and predictable cash flow* – Produce strong and predictable yields
- *Low correlation* – Provides portfolio diversification, low beta; expected to exhibit low to no correlation with fixed income and equities
- *Inelastic demand* – Predictable demand with little volatility, less susceptibility to economic downturns
- *Limited commodity risk* – Not subject to commodity pricing
- *Insensitive to changes in technology* – Low risk of redundancy or technology obsolescence
- Investments are usually illiquid and involve a long (10 to 20 year) holding period.

Timberland

- *Return* – Low correlation with other asset classes, returns stem from four distinct sources: biological growth, timber prices, land values and management strategy
- *Income* – Driven almost entirely by the sale of harvested mature trees
- *Correlation* – Expected to exhibit low to no correlation with government and investment grade corporate bonds, and moderate correlation with high yield and equities
- *Appreciation* – Driven by increased volume and value on timber and appreciation of underlying land
- Categorized by type of land (e.g. plantation, natural forest), type of tree (e.g., hardwood, softwood), country and region

Commodities

- *Real assets* – Raw materials that are the physical inputs of production, relatively homogenous in nature, lending itself to be traded via contracts with standardized terms
- *Inflation protection* – Storable commodities (such as energy) directly related to the intensity of economic activity exhibit positive correlation with unexpected inflation
- *Insurance risk premium* – Commodity futures prices tend to be priced at a discount to spot prices in order to induce speculators to bear volatile commodity price risk that inventory holders and producers wish to lay off.
- *Positive event risk* – Surprises that occur in the commodities markets tend to be those that unexpectedly reduce the supply of the commodity to the market, resulting in price spikes.

- *Negatively correlated with financial assets* – Unlike stocks and bonds, commodities are not as directly impacted by changes in discount rates as they are by the current supply and demand of the underlying commodity, thus they should be expected to have little or even negative correlation with capital assets.

Risks

Real Estate

- *Property type risks* – Negative changes in demand/supply conditions by property type (e.g., office, industrial, retail, lodging, mixed-use, multi-family)
- *Location risks* – Local market condition relative to the adverse changes surrounding a property, or in discovery of hazardous underlying conditions, such as toxic waste
- *Tenant credit risks* – Failure by a tenant to pay what is contractually owed
- *Physical/functional obsolescence* – Negative influences on buildings due to technological changes, outdated layout and design features, and physical depreciation
- *Interest rate risk* – Higher rates can negatively impact both sales strategies and leveraged properties at refinancing
- *Reinvestment risk* – In a declining rental rate market, cash flow received may not be reinvested at the same level.
- *Business cycle risk* – As economies slow down, there may be less demand for space.
- *Inflationary risk* – Rent levels may not always keep up with rising operating expense levels.
- *Illiquidity* – Inability to effectively liquidate a property into cash
- *Natural disaster risk* – Weather, floods, earthquake
- Regulatory concerns are critical, especially in emerging markets.
- Capital and managerial intensive

Infrastructure

- *Leverage* – Deals with leverage between 40% and 80% can transform low risk assets into risky investments. Changes in the credit environment alter refinancing risk.
- *Market inefficiencies* – Competitive auctions lead to overpaying. There is a limited history and track record in the U.S. infrastructure space.
- *Political and headline risk* – Public acceptance and understanding of infrastructure needs to expand. In addition, the political landscape in every state and municipality differs.
- *Regulatory risk* – Regulated assets are subject to government changes
- *Construction and development* – Project overruns and delays should be shared with construction partners. Volume/demand risk for new developments can vary.

- *Labor issues* – Greenfield projects could generate new jobs while the privatization of brownfield assets could eliminate skilled labor members
- *Asset control* – Stipulations via concession agreements limit some management control (pricing, growth, decision approvals, etc.). Asset control needs to be appropriately priced.
- *Firm specific risk* – Unique risks are associated with specific firm

Timberland

- *Liquidity risk* – Liquidity is thin, marketplace characterized by few buyers and sellers, transactions are complicated and can take many months to execute.
- *Valuation risk* – Annual appraisal process can lead to disparities between carrying value and realized sales prices during downturns.
- *Physical risk* – Subject to losses from natural and human-caused events such as fire, insect and vermin infestations, disease, inclement weather, and theft
- *Political and regulatory risk* – Environmental regulations can restrain or prohibit timberland management activities.
- *Leverage* – Can amplify volatility and potentially lead to an inability to refinance properties or lead to a distressed sale, requires a minimum level of generated income
- *Location risks* – Real estate dispositions may also be impacted by weakness in local residential real estate markets.

Commodities

- *Price risk* – Commodities with difficult or non-existent storage situations (heating oil, live cattle, live hogs, copper) coupled with a long-lead time between the production decision and the actual production of the commodity can lead to very volatile spot prices.
- *Negative futures roll* – When the future contract's price is at a premium to the spot price, the cost to roll contracts forward is negative: an investor continuously locks in losses from the futures contracts converging to a lower spot price.
- *Regulatory risk* – Concerns about the role played by investors in commodity markets could lead to new regulations impacting available investment opportunities, ultimately affecting investors' "license to invest".
- *Leverage* – A commodity futures program that is not fully collateralized (for every desired \$1 in commodity futures exposure, an investor sets aside \$1 in cash) can amplify volatility and potentially lead to greater losses.
- *Implementation* – Because futures contracts are levered, cash management for the collateral is an important consideration due to the value.

Global Alternatives

Definition

Investment has a distinct return/risk factor profile as compared to other specified broad asset class groupings. Examples: Low market exposure/absolute return strategies such as market neutral, and other niche strategies with low asset class beta such as insurance-linked investments, volatility, intellectual property, healthcare royalty, shipping, litigation finance and fine art.

Strategic Role

- More robust diversification achieved through the introduction of non-traditional return drivers/risk factors
- Low or negative correlations to other asset classes
- Return profile less dependent on economic growth and interest rates
- Potential for attractive risk-adjusted returns

Characteristics

- *Returns* – Exhibits lower correlations to broader equity and credit markets in periods of market distress
- *Illiquidity* – Transactions may require a longer period to execute than other asset classes
- *Inefficient Market* – Information affecting asset valuation and market trading may not be accurately or efficiently reflected or interpreted in its pricing.

Risks

- *Market risk* – Cost of carry on being long volatility
- *Natural disaster risk* – Weather, floods, earthquake affect natural catastrophe-based insurance-linked products
- *Due diligence* – Complicated to evaluate and monitor
- *Illiquidity* – Transactions may require a longer period to execute than other asset classes.
- *Implementation* – Complexity of implementation may be an impediment.

TFFR Board Adopted: January 24, 2013

Updated: August 22, 2014