TRA Board Retreat
8-16-2023

Wednesday, August 16, 2023 – 9:30 a.m.
Room 117 or Hybrid Meeting Via WebEx
**PLEASE NOTE**

The board retreat is an all-day, educational meeting. No action will be taken at this meeting other than approval of the minutes. Due to the informational nature and length of the meeting, there will be no public comments agenda item. Members of the public can submit written comments to info@minnesotatra.org by August 15. Written comments submitted by the deadline will be compiled and provided to the trustees.

1. **Call to Order**

2. **Approval of Minutes**
   9:30 am – 9:35 am
   a. 1-6 Minutes of meeting held June 15, 2023 [ACTION]

3. **Presentation by Actuarial Consultants**
   9:35 am – 11:30 am
   a. 7-36 Trustee Education – Role of the Actuary
   b. 37-82 Experience Study report, FY’s 2019-2022
   c. 83-96 Estimated 2023 valuation results (funding valuation)
   d. 97-108 Actuarial Standards of Practice No. 4

   **Presenters:** Patrice Beckham, Brent Banister, Ben Mobley - Cavanaugh Macdonald

   -----------------------------------
   Break: 11:30 am – 11:45 am
   -----------------------------------

4. **State Board of Investment**
   11:45 am – 12:30 pm
   a. 109-110 Asset Allocation and Performance
      **Presenter:** Jill Schurtz, State Board of Investment

   Break for lunch 12:30 pm – 1:00 pm
   -----------------------------------

5. **Fiduciary Responsibility Training**
   1:00 pm – 1:45 pm
   a. 111-162 Fiduciary Responsibility
      **Presenters:** Audra Ferguson, Robert Gauss - Ice Miller

6. **TRA Trends and Comparisons**
   1:45 pm – 2:35 pm
   a. 163-204 TRA trends and comparisons
      **Presenter:** Jay Stoffel

7. **Strategic Plan Update**
   2:35 pm – 2:45 pm
   a. 205 Memo
      **Presenters:** Jay Stoffel, Tim Maurer
Break: 2:45 pm – 3:00 pm

8. **Legislative Goals and Strategy**
   3:00 pm – 3:30 pm
   a. **207 Memo**
   *Presenters: Rachel Barth, Holly Dayton*

9. **Dates of Future Meetings:**

<table>
<thead>
<tr>
<th>Board Meetings 9:30 am - in Room 117 unless noted</th>
<th>Audit Committee Meetings - 9:30 am via Webex</th>
</tr>
</thead>
<tbody>
<tr>
<td>• September 13, 2023</td>
<td></td>
</tr>
<tr>
<td>• November 8, 2023</td>
<td>• November 1, 2023</td>
</tr>
<tr>
<td>• January 17, 2024</td>
<td></td>
</tr>
<tr>
<td>• March 6, 2024</td>
<td>• March 5, 2024</td>
</tr>
<tr>
<td>• April 10, 2024</td>
<td></td>
</tr>
<tr>
<td>• May 8, 2024</td>
<td></td>
</tr>
<tr>
<td>• June 12, 2024</td>
<td>• June 11, 2024</td>
</tr>
</tbody>
</table>

10. **Adjourn**
TAB 2
MINNESOTA TEACHERS RETIREMENT ASSOCIATION  
MINUTES OF THE MEETING OF THE BOARD OF TRUSTEES  
JUNE 15, 2023  
HYBRID MEETING HELD VIA WEBEX AND IN ROOM 117  
(PURSUANT TO MN STATUTES, SECTION 13D.015)

1. Call to Order  
Board President Martha Lee Zins called the meeting to order at 9:30 a.m. Roll call was taken. Those attending in addition to Zins were:


TRA Staff: Staff attending in person were: Rachel Barth, Zaira Blackburn, Carol Diedrich, Tim Maurer, Maria Steele, and Jay Stoffel. Staff attending remotely via WebEx were: David Anderson, Kathleen Dalzell, Holly Dayton, Joel Hohenstein, Dominic Matern, Seth McDowell, Leslie Nagel, Eric Nitardy, Sonja Parr-Baker, Lori Olsen, Erica Pinc, Tiffany Porter, Mark Roehmild, Stephanie Tonihka, Cole White

Others: Kathy Oellerich, Todd Richter, David Rondestvedt, and Rodney Rowe

Legal Representative: Joseph Weiner

2a. Approval of Minutes of Board meeting on May 10, 2023
Olson moved, seconded by Stencel to approve the May 10, 2023 meeting minutes as corrected. A roll call vote was taken. The motion passed unanimously.

4a. Audit Committee Report
Stencil noted that the Audit Committee met on June 13, 2023 and reviewed the Internal Audit Staffing Update, the FY2024 Audit Plan, the FY2023 Annual Report, and the Internal Controls Bulletins and Tone at the Top educational materials.

Stencil moved, seconded by Denise Anderson to approve the Fiscal Year 2024 Internal Audit Plan. A roll call vote was taken. The motion passed unanimously.

4b. Election of officers, selection of FMC representatives, name Audit Committee members and chair and vice-chair
Olson nominated Zins for board president. A roll call vote was taken. The motion passed on a vote of seven to one (Lindstrom abstained).
Olson nominated Stencel for vice president. A roll call vote was taken. The motion passed on a vote of seven to one (Lindstrom abstained).

Zins nominated Stencel as chair of the Audit Committee, and Reno as vice chair of the Audit Committee, Olson seconded the nomination. A roll call vote was taken. The motion passed on a vote of seven to one (Lindstrom abstained).

Olson moved, seconded by Carr to name Denise Anderson as the Department of Education representative and Josh Botnen as the MMB representative on the TRA Audit Committee. A roll call vote was taken. The motion passed unanimously.

4c. Appointment of Executive Director
Zins moved, seconded by Olson to reappoint Jay Stoffel as executive director of TRA for FY24. A roll call vote was taken. The motion passed on a vote of seven to one (Lindstrom abstained).

4d. Disposition of 2023 election ballots
Steele reviewed information on the 2023 board election process and results. She noted that results are posted on the TRA website and will be reported in the next issue of the TRIB newsletter.

Reno moved, seconded by Denise Anderson to authorize TRA management to instruct the election vendor to destroy materials and ballots after August 15, 2023, if no challenges are received. A roll call was taken and passed unanimously.

4e. Board retreat, August 16, 2023 – Draft Agenda
Stoffel reviewed a draft agenda for the August 16, 2023 Board retreat.

5. Legislative Update
Barth provided a summary of the 2023 legislative session and answered questions from Board members.

Trustee Carr thanked Barth, Stoffel, Dayton, Maurer and TRA staff for their work on the legislative session.

A break was taken from 11:06 a.m. to 11:16 a.m.

6a. Report from Executive Director
Stoffel reviewed a memo summarizing recent actions by the Investment Advisory Council and the State Board of Investment.

6b. Report from President
President Zins read and presented to trustees Olson and Drugge Wuench the following resolutions:
IN APPRECIATION
LUKE V. OLSON

WHEREAS, Luke V. Olson served on the Board of the Teachers Retirement Association (TRA) with distinction as an active member representative from July 1, 2019 to June 30, 2023, and served during that time as vice-chair of the Audit Committee, a member of the Facilities Management Committee, and as Board Vice-President; and

WHEREAS, Mr. Olson served the students and families of St. Thomas Academy from 1985 to 1990 and the students and families of South St. Paul Public Schools since 1990 as a teacher with professionalism and dedication; and

WHEREAS, during Mr. Olson’s tenure on the Board, the TRA experienced substantial growth in members and assets, and met successfully the challenges of operating during a world-wide pandemic; and

WHEREAS, during Mr. Olson’s tenure on the TRA Board, significant pension reform legislation was passed in 2023, all with the vision, creativity, and guidance of Mr. Olson and his concern for the members of the plan and the sustainability of the pension fund; and

WHEREAS, Mr. Olson has been active in many other public service roles including Education Minnesota Pension Task Force, Metro Area Council, and Presidents Council, Minnesota Council of Teachers of Mathematics, National Council of Teachers of Mathematics; and

WHEREAS, during his TRA Board service Mr. Olson was an active participant of the National Council on Teacher Retirement serving as Chairperson of the Credentials Committee in 2020, Chairperson of the Resolutions Committee in 2022, and member of the NCTR Executive Committee in 2023; now therefore be it

RESOLVED, that the Trustees, the Executive Director, and the staff of the TRA join with the members of the Association in extending their grateful appreciation to Luke Olson and recognize him for his contributions and dedicated service to Minnesota educators, students, and the public school system; and be it further

RESOLVED, that a copy of this resolution be presented to Luke Olson and also be included in the official permanent minutes of the proceedings of the Board of Trustees of the Teachers Retirement Association.

Approved by the TRA Board of Trustees on June 15, 2023.
IN APPRECIATION

WENDY DRUGGE WUENSCHE

WHEREAS, Wendy Drugge Wuensch served on the Board of the Teachers Retirement Association (TRA) with distinction as an active member representative from July 1, 2021 to June 30, 2023; and

WHEREAS, since 1999 Ms. Drugge Wuensch served the students and families of the Wayzata and Burnsville school districts as a mathematics teacher with professionalism and dedication; and

WHEREAS, during Ms. Drugge Wuensch’s tenure on the Board, the TRA experienced substantial growth in assets and members and met successfully the challenges of operating during a world-wide pandemic; and

WHEREAS, during Ms. Drugge Wuensch’s tenure on the TRA Board, significant pension reform legislation was passed in 2023, all with the vision, creativity, and guidance of Ms. Drugge Wuensch and her concern for the members of the plan and the sustainability of the pension fund; and

WHEREAS, Ms. Drugge Wuensch has also been active in many other public service roles including leadership positions with the Burnsville Education Association, and several positions with Education Minnesota including the Governing Board, Executive Committee, Personnel Committee, Council of Local Presidents; and

WHEREAS, during her TRA Board service Ms. Drugge Wuensch was an active participant of the National Council on Teacher Retirement; now therefore be it

RESOLVED, that the Trustees, the Executive Director, and the staff of the TRA join with the members of the Association in extending their grateful appreciation to Wendy Drugge Wuensch and recognize her for her contributions and dedicated service to Minnesota educators, students, and the public school system; and be it further

RESOLVED, that a copy of this resolution be presented to Wendy Drugge Wuensch and also be included in the official permanent minutes of the proceedings of the Board of Trustees of the Teachers Retirement Association.

Approved by the TRA Board of Trustees on June 15, 2023.
6c. Financial Update
Stoffel reviewed the dashboard report included in the packet.

6d. Operational Update
Maurer reviewed the May issue of the Inside TRAck.

6e. Assistant Attorney General Update
Weiner noted there was nothing to report at this time.

7. Public Comments
Todd Richter, Paul Peterson, Kimberly Husfeldt offered their comments.

8. Dates of Future Meetings
Zins announced the dates of upcoming Board and Audit Committee meetings.

Stencel moved, seconded by Olson to change the date of the November Audit Committee meeting to November 1, 2023. A roll call vote was taken. The motion passed unanimously.

9. Adjourn
Stencel moved, seconded by Reno, to adjourn the meeting at 11:45 a.m. A roll call vote was taken. The motion passed unanimously.

Attest:

_____________________________________
J. Michael Stoffel
Executive Director

_____________________________________
Martha Lee Zins
President
‘This page intentionally left blank’
TAB 3
The Role of the Actuary
Board Education Session

August 16, 2023

Cavanaugh Macdonald Consulting, LLC
### TRA is a Defined Benefit Plan

<table>
<thead>
<tr>
<th>Benefit payments are defined by plan provisions (in statute)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$(Benefit Multiplier) \times (Credited Service) \times (Final Average Salary)$</td>
</tr>
<tr>
<td>Benefit payments commence under plan-specified conditions.</td>
</tr>
<tr>
<td>Benefit is typically paid for the life of the member.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount, timing and duration of those future benefit payments are unknown, so assumptions are used to bridge the gap between what we know and what will happen in the future.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Most defined benefit plans are “advance funded”, i.e., contributions are paid while members are working which will accumulate with investment earnings and be sufficient to pay the benefits, as due. This process of assigning cost to years of service to fund future benefits requires actuarial expertise.</th>
</tr>
</thead>
</table>
Typically, retirement systems do not have an actuary on staff, so they hire a “consulting actuary” to provide required services to the system.

Responsibilities include:

- Actuarial Valuations – annually
  - Funding
  - Accounting/Financial Reporting
- Experience Study – periodically, usually every 4-5 years
- Cost Studies (change to benefit structure or funding) – as needed
- Actuarial factors and calculations – as needed
- Consulting - ongoing
Basic Retirement Funding Formula

C = contributions
I = investment income
B = benefits paid
E = expenses

"Money In = Money Out"
Approaches to Funding Retirement Systems

➢ Actuarial Contribution Rates
  ▪ Actual contributions are based on actuarial contribution rates developed in the annual actuarial valuation.
  ▪ Contribution rates change from year to year based on the valuation results which capture the actual vs expected experience.
  ▪ Employee contribution rate may be fixed or vary like the employer contribution rate

➢ Fixed Contribution Rates (like TRA)
  ▪ The employer and employee contribution rates are fixed and do not change from year to year.
  ▪ There is more funding risk because actual contributions do not change (up or down) in response to actual versus expected experience. Funded ratios and projected funding results can vary dramatically with actual experience, especially investment returns.
  ▪ Less common in public plans

➢ Combination: actuarially based, but some restriction on the amount of increase or decrease in the actual contribution rate.
Primary functions of valuation:

- Determine funded status (assets/liabilities)
- Evaluate funding progress
- Determine the contribution rate needed to fund the benefits promised, based on current membership, actuarial assumptions and funding policy
- Measure changes from the prior year
- Determine certain financial reporting requirements for plan

Actuarial valuation does NOT predict:

- Future financial soundness of the system
- Future investment performance
- Impact of future members
- Impact of future plan changes
- Future impact of other experience (gains/losses)
### Funding Valuation

**Purpose:**
Determine contribution level for given year (or evaluate fixed contribution rates). Also evaluate funded status

**Basis of Requirements:**
Funding policy (which is statutory for TRA)

**Reporting:**
Unfunded actuarial accrued liability = Actuarial accrued liability minus actuarial assets
Actuarial contribution rate is sum of:
1. Normal cost (value of benefit accruing)
2. Amortization of unfunded actuarial accrued liability

### Accounting Valuation

**Purpose:**
Financial reporting for the system and for participating employers

**Basis of Requirements:**
Governmental Accounting Standards Board Statements 67 and 68 (GASB 67 and 68)

**Reporting:**
Net Pension Liability: actuarial accrued liability minus market value of asset
- allocated to employers and included on their individual balance sheet
Pension Expense also allocated to participating employers
The Elements of an Actuarial Valuation

Data

Assumptions

Actuarial Cost Method

Assets

Plan of Benefits

Valuation Results
Membership Data

➢ Snapshot at valuation date
  ▪ In pay group (retirees/beneficiaries)
  ▪ Active members
  ▪ Inactive vested members
  ▪ Inactive non-vested members (due a refund)

➢ Basic demographic data
  ▪ Birthdate, Gender, Service, Salary
  ▪ Unique items needed for benefit structure

➢ Generally, the valuation doesn’t include future members (closed group)
Actuarial Cost Method

- A method used to allocate the Present Value of Benefits between past service (Actuarial Accrued Liability) and future service (Present Value of Future Normal Costs)
- Most common method is Entry Age Normal cost
- All cost methods maintain the following relationship:
Present Value of Benefits (PVB)

- Value of benefits expected to be paid to all current participants (active and retired)
- Includes past service and expected future service
- Based on projected salary
Actuarial calculations typically involve determining a “present value”

Present value: equivalent value, in today’s dollars, of a stream of future payments

In other words, how much money would you need today (based on your assumptions) to make the expected payments in the future?

- Time value of money is dependent on the assumed investment return (also called interest rate)
- Inverse relationship: higher interest rate = lower present value
- Expected payments involve probability of certain events occurring
Example: You owe $1,000 to 100 people one year from now. Each person is 70 years old. You expect an 8% return and the chance each person will be alive in one year is 98%. What is the present value of the debt?

\[
100 \times \frac{1,000}{1.08} \times 98\% = 90,741
\]

Observation: Under what circumstances will you have exactly enough money to pay the debt?
Events to Consider in Actuarial Present Value

- Mortality
- Investment return
- Retirement
- Termination of employment
- Disability
- Salary Increases
- Cost of Living Adjustments
KNOWN at valuation date:
1. Age
2. Salary
3. Gender
4. Service to date
5. Membership group

ASSUMED at valuation date:
1. Future salary increases
2. Retirement date(s)
3. Death rates before and after retirement
4. Disability rates
5. Other termination rates

Date of Hire (Age 30)  
Valuation Date (Age 45)  
Retirement Date (Age 60)  
Date of Death (Age 80)
### Actuarial Accrued Liability (AAL)
- Value of benefits expected to be paid to participants based upon past service
- Includes all benefits for members in-pay status
- Includes the portion of active members’ benefits allocated to service earned before the valuation date

### Normal Cost (NC)
- Present value of active members’ benefits allocated to the current year of service
- Sometimes called service cost – the annual cost resulting from an additional year of service

### Present Value of Future Normal Costs (PVFNC)
- Present value of all future annual normal costs
- Difference between PVB and AAL
Market value of assets

- One day measurement is not a reliable measure of the long-term value
- Pure market value reflects the extreme volatility inherent in the market which impacts the funded ratio and actuarial contribution rate

Most public retirement systems use a “smoothed” market value, called the actuarial value of assets (AVA)
Most common method: recognize the difference in the actual and expected returns on market value evenly over a closed five-year period (used by TRA)

Deferred experience (difference between actuarial and market value) yet to be recognized. The following from the 2022 valuation illustrates the deferred investment experience yet to be recognized:

<table>
<thead>
<tr>
<th>CY Ending</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millions $</td>
<td>(3,039)</td>
<td>3,011</td>
<td>(294)</td>
<td>(12)</td>
</tr>
</tbody>
</table>
➢ There should be no bias in the actuarial value of assets. However, Actuarial Value is generally expected to be:
  ▪ Below Market when market is doing well
  ▪ Above Market when market is doing poorly
June 30, 2022 TRA Actuarial Valuation Results

Present Value of Benefits
$37.5 Billion

➢ Funded Ratio = Actuarial Assets/Actuarial Accrued Liability or 82.0%
➢ Unfunded Actuarial Accrued Liability = Actuarial Accrued Liability – Actuarial Assets = $5.7 Billion
Unfunded Actuarial Accrued Liability

- Unfunded actuarial accrued liability (UAAL) is a natural part of retirement system funding given the number of assumptions used to model the future.

- Conceptually similar to a home mortgage: a debt to be systematically paid off over time

- Must be financed in addition to ongoing cost for actives (normal cost)

- The existence of an UAAL does not automatically mean the system has been “underfunded”
Actuarial or Experience Gains and Losses

➢ Actuarial gains/(losses) result from actual experience that is better/(worse) than assumed
  ▪ Actuarial gains increase the funded ratio, decrease the unfunded actuarial accrued liability and decrease the actuarial contribution rate
  ▪ Opposite is true for actuarial losses

➢ Events that typically result in actuarial gains:
  ▪ Lower salary increases
  ▪ Higher investment return
  ▪ Fewer and/or later retirements
  ▪ More retiree deaths

➢ Because some members have higher liability than others, actuarial experience depends not just upon how many members, but also which members, change status
Amortization of UAAL

Amortization policy includes:
- Amortization period: open or closed (most common now)
- Payments: level dollar or level percent of pay (most common)
- Length of amortization period (typically 15-25 years)
- One amortization base or layers (most common)

“Negative amortization” occurs when the UAAL payment is less than interest on UAAL
- Often occurs in certain situations when contributions are developed as a level percent of payroll because payments are back-end loaded.
- Likely to happen with longer amortization periods, e.g., over 20 years
- Depends on the amortization period, investment return and payroll growth assumptions
- New Actuarial Standard of Practice Number 4 (effective in 2023) includes guidance on evaluating amortization policies.
TRA amortization period, which is set in statute, was 30 years in the 2022 valuation, beginning in 2018 and ending in 2048.

If the unfunded actuarial accrued liability changes due to assumption changes or benefit changes, the amortization period may be adjusted (reset in 2024 with legislative changes).

Note: TRA is not funded with actuarial contribution rates, so the UAAL amortization is for comparison of the statutory contribution rate to the actuarial/required contribution rate.

Real question for TRA is, given the statutory contributions, when is the system expected to reach full funding. We provide a projection tool to help answer this question.
Amortization of the UAAL

Under the level percent of payroll methodology, the dollar amount of the UAAL payment increases each year, consistent with the payroll increase assumption.

Given the number of years remaining in the amortization period, substantial progress in reducing the dollar amount of the UAAL does not occur for many years.
Important part of Board governance
- Provides basis for analyzing and evaluating the existing methods and assumptions and developing recommended changes, if needed

Actuary’s role is to make recommendations for each method and assumption
- As fiduciaries, the Board is responsible for the selection of actuarial assumptions
- Board can adopt all, none, or some of actuary’s recommendations

Assumptions and methods do not affect the true cost of the plan, which is the actual benefit payments paid from the trust
- Assumptions and methods will influence the incidence of costs (timing and amount of contributions)
Experience reviews should be performed on a regular basis:
- Every 3 to 5 years depending on size of plan
- After major changes in benefit programs when enough credible experience has been accumulated
- Last TRA experience study covered the period 7/1/2018 to 6/30/2022

Selection of assumptions does not determine the final costs of the plan
- Final costs are dictated by the actual benefits paid from the fund
- Assumptions that are too “optimistic” can result in costs being shifted to future generations
- Assumptions that are too “pessimistic” can result in higher costs today at the detriment of other priorities
### Impact of Assumption Changes

<table>
<thead>
<tr>
<th>Assumption Change</th>
<th>Usual Impact on Liabilities and Employer Contribution Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic Assumptions</strong></td>
<td></td>
</tr>
<tr>
<td>Longer lifetimes</td>
<td>Increase</td>
</tr>
<tr>
<td>Earlier retirements</td>
<td>Increase</td>
</tr>
<tr>
<td>More disabilities</td>
<td>Increase</td>
</tr>
<tr>
<td>More terminations</td>
<td>Decrease</td>
</tr>
<tr>
<td><strong>Economic Assumptions</strong></td>
<td></td>
</tr>
<tr>
<td>Decrease investment return</td>
<td>Increase</td>
</tr>
<tr>
<td>Decrease salary increases</td>
<td>Decrease</td>
</tr>
</tbody>
</table>
The Valuation Control Cycle

- Monitor Plan Metrics
- Experience Studies
- Update Assumptions and Methods
- Review Plan Experience
- Annual Valuation Report
- Annual Gain/Loss Analysis
- Actuarial Audits
➢ Actuarial work is highly technical and based on a very specialized skill set

➢ Our work focuses on the liabilities of the system (value of future benefit payments) and developing a systematic plan to fund the promised benefits over a reasonable timeframe

➢ Recent Trends
  ▪ More frequent review of economic assumptions
  ▪ Reduction in investment return assumptions
  ▪ Layered amortization bases
  ▪ Shorter amortization periods
  ▪ Focus on risk assessment and disclosure

➢ The actuary is an important part of the TRA team!
‘This page intentionally left blank’
System liabilities are the benefit payments to be made to members in the future.

- Benefit payment amounts are dependent on a number of contingent events that are unknown.
- Actuaries use assumptions to estimate future benefit payments including when, how much, and how long.
- Assumptions will impact the allocation of costs, so they are usually set neither overly conservative or aggressive.

Assumptions are just that – assumptions. If actual experience differs from the assumptions over time, the costs will differ also.
Purpose of Experience Study

➢ Provides basis for analyzing existing assumptions and developing recommended changes.

➢ Actuary’s role is to make recommendations for each assumption
  ▪ As fiduciaries, the Board is responsible for the selection of actuarial assumptions.
  ▪ Board can adopt all, none, or some of actuary’s recommendations.
  ▪ For TRA, some assumption changes require legislative action, and all recommended changes are subject to approval by the Legislative Commission on Pensions and Retirement (LCPR).
Experience Studies

➢ Compares actual experience during study period with expected results, based on current assumptions.

➢ Past experience provides strong guidance for some assumptions (mortality) and weak guidance for others (investment return).

➢ Both science and art involved in the process.
  ▪ Objective (science): number crunching of actual and expected numbers of members.
  ▪ Subjective (art): how to interpret the information and decide on appropriate changes.
Monitors all actuarial assumptions and methods used in the valuation process.

Typically performed every 4 years. Last study was based on FY 2014 to 2018 period.

This study period includes experience from July 1, 2018 to June 30, 2022.
Assumptions have a significant impact on the calculation of liabilities and the required (actuarial) contribution rate:

- Different assumptions create different cost patterns over time.
- We generally shoot for middle ground, not overly conservative or aggressive.

Valuation process is self-correcting as it captures actual experience to date each year.

Assumptions do not affect the true cost of the plan - the true cost is the actual benefit payments paid from the trust.
## Selection of Assumptions

### What Are They?

<table>
<thead>
<tr>
<th>Economic</th>
<th>Demographic</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Price Inflation</td>
<td>• Retirement Rates</td>
</tr>
<tr>
<td>• Investment Return</td>
<td>• Promotional/Step Pay Increases</td>
</tr>
<tr>
<td>• Wage Inflation</td>
<td>• Disability</td>
</tr>
<tr>
<td>• COLA</td>
<td>• Turnover</td>
</tr>
<tr>
<td>• Interest Crediting Rate on Contributions</td>
<td>• Mortality</td>
</tr>
<tr>
<td>• Payroll Growth</td>
<td></td>
</tr>
</tbody>
</table>

### Who Selects Them?

<table>
<thead>
<tr>
<th>Economic</th>
<th>Demographic</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Board</td>
<td>• Mostly Actuary</td>
</tr>
<tr>
<td>• Actuary</td>
<td>• Board Approves</td>
</tr>
<tr>
<td>• Other Advisors</td>
<td></td>
</tr>
</tbody>
</table>
Actuarial Standards of Practice (ASOPs)

- Issued by the American Academy of Actuaries.

- Provide guidance to actuaries in the selection of assumptions used in valuing pension benefits.
  - Economic assumptions (ASOP 27)
  - Demographic assumptions (ASOP 35)
Recommendation is for a “reasonable assumption”.
- Appropriate for purpose of measurement.
- Reflects actuary’s professional judgment.
- Takes into account historical and current economic data that is relevant.
- Reflects actuary’s estimate of future experience, observation of estimates inherent in market data, or combination.
- No significant bias (not significantly optimistic or pessimistic).
- Permissible to include some conservatism for adverse deviation.

Advises actuaries not to assign too much credibility to recent experience.
Economic Assumptions - Building Block Method

Investment Return → Real Rate of Return → Inflation

Individual Salary Increases → Merit Scale → Productivity → Inflation

Wage Inflation → Productivity → Inflation

Note: inflation assumption and productivity must be consistent in all assumptions.
### Current Economic Assumptions

<table>
<thead>
<tr>
<th>Current Assumption</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Inflation</td>
<td>2.50%</td>
</tr>
<tr>
<td>Investment Return</td>
<td>7.50%</td>
</tr>
<tr>
<td>Wage Inflation</td>
<td>2.85% through 2028, then 3.25%</td>
</tr>
<tr>
<td>Payroll Growth</td>
<td>3.00%</td>
</tr>
</tbody>
</table>
Historical Inflation

Through June 30

<table>
<thead>
<tr>
<th>Period</th>
<th>Inflation</th>
<th>Period</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926-2022</td>
<td>2.98%</td>
<td>1992-2022</td>
<td>2.53%</td>
</tr>
<tr>
<td>1972-2022</td>
<td>4.00%</td>
<td>2002-2022</td>
<td>2.53%</td>
</tr>
<tr>
<td>1982-2022</td>
<td>2.83%</td>
<td>2012-2022</td>
<td>2.59%</td>
</tr>
</tbody>
</table>
Forecasts of Inflation

➢ Current levels of expected inflation.

<table>
<thead>
<tr>
<th>Source</th>
<th>Expected Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Consultants Survey (Q1 2023)</td>
<td>2.46%</td>
</tr>
<tr>
<td>Bond Market (June 2023)</td>
<td>2.20%</td>
</tr>
<tr>
<td>2023 Social Security Trustees Report</td>
<td>2.40%</td>
</tr>
<tr>
<td>2023 Survey of Professional Forecasters</td>
<td>2.36%</td>
</tr>
<tr>
<td>Peer Comparison</td>
<td>2.52%</td>
</tr>
</tbody>
</table>

➢ Based on available data, we recommend retaining the current assumption of 2.50%.
Investment Return Assumption

➢ Building block approach
  ▪ Rate of price inflation
  ▪ Real rate of return
  ▪ Sum is expected investment return

➢ Asset allocation is key factor in setting this assumption
  ▪ Portfolios that are more aggressive can generally expect higher returns along with potentially greater volatility.

➢ Small changes in the assumed investment return can have large impact on liabilities and contribution rates.
➢ Retirement funding is a long-term concern and so a long-term perspective is needed.
Historical Returns

ANNUALIZED RETURNS through 6/30/22

1-Year Return: -6.4%  
3-Year Return: 8.3%  
5-Year Return: 8.5%  
10-Year Return: 9.4%  
20-Year Return: 8.2%  
30-Year Return: 8.6%
There has been a dramatic reduction in the median investment return assumption since 2010, declining from 8% to 7%.
Investment return assumption is set by Legislature.
  ▪ Changed from 7.50% to 7.00% in the 2023 session.

To evaluate this assumption, we considered the capital market assumptions of 11 investment consultants who work with public plans.
  ▪ Used TRA’s asset allocation and each consultant’s capital market assumptions.
  ▪ Average expected return over next 20 years is 7.51%.

Recommend an expected return of 7.00% composed of 4.50% real return and 2.50% inflation.
  ▪ Provides a slight level of conservatism (probability of meeting the assumption using current expectations is above 50%).
The difference between wage and price inflation has been fairly consistent over time.
Recommend retaining current select and ultimate assumption:

- 2.85% (including price inflation) through 6/30/2028.
- 3.25% (including price inflation) thereafter.

There have been larger than expected salary increases recently in many retirement systems, but it is not clear if this will continue, so we do not feel confident recommending a change at this time.
Payroll Growth Assumption

- Does not impact the funded ratio or unfunded actuarial accrued liability
- Only used to calculate UAAL amortization payment

<table>
<thead>
<tr>
<th>Valuation Date</th>
<th>Count</th>
<th>Covered Payroll (Thousand$)</th>
<th>Total Growth</th>
<th>Average Salary</th>
<th>Average Growth in Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>71,916</td>
<td>$2,952,887</td>
<td></td>
<td>41,060</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>76,515*</td>
<td>3,645,230</td>
<td>4.3%</td>
<td>47,641</td>
<td>3.0%</td>
</tr>
<tr>
<td>2013</td>
<td>76,765</td>
<td>3,917,310</td>
<td>1.5%</td>
<td>51,030</td>
<td>1.4%</td>
</tr>
<tr>
<td>2018</td>
<td>82,495**</td>
<td>4,832,917</td>
<td>4.3%</td>
<td>58,584</td>
<td>2.8%</td>
</tr>
<tr>
<td>2022</td>
<td>84,308</td>
<td>$5,944,310</td>
<td>5.3%</td>
<td>70,507</td>
<td>4.9%</td>
</tr>
</tbody>
</table>

* Minneapolis merger was between 2003 and 2008
** Duluth merger was between 2013 and 2018

- Recommend retaining current assumption of 3% per year.
Termination
Will a member work long enough to vest and what monthly benefit will be owed?

Retirement
When will the member retire and start collecting benefits?

Mortality
How long will monthly benefits be paid?
Measuring Demographic Experience

➢ Compare what actually happened to individual members with what was expected based on the actuarial assumptions

➢ Credibility – amount of weight assigned to the recent experience
   ▪ Size of group
   ▪ Length of study period
   ▪ Unusual events during study period

➢ Key evaluation tool is actual decrements/expected decrements (called A/E ratio)
   ▪ Decrement is a change in a member’s status during the study period (e.g., retirement, termination, death).
   ▪ May weight the exposures and decrements to reflect liability.
Measuring Demographic Experience

- **Step 1**: Determine number of members changing membership status (decrements) during study period tabulated by age, duration, gender, and membership class.

- **Step 2**: Determine number of members expected to change status by multiplying membership statistics (called exposure) by the expected rates of decrement.

- **Step 3**: Compare number of actual decrements to number of expected decrements, called A/E ratio (expressed as %).

**Example:**
- 100 people eligible to retire at age 62
- Actuarial assumption is 10% retire at age 62
- Actual retirements were 15
- Expected retirements: 100 * 10% = 10
- A/E Ratio = 15/10 = 150%
Generally, the closer the Actual/Expected ratio is to 100%, the better the current assumption anticipated the overall experience. However, the pattern of the actual experience may vary significantly from the assumption indicating a need for change, as illustrated below.
Mortality Assumption

➢ Critical assumption from a cost perspective because it anticipates the duration of benefit payments.
   ▪ If people live longer, it increases the liabilities and costs.
   ▪ Longevity risk is manageable for large groups like TRA, as compared to individuals/small groups.

➢ Mortality tables vary by gender.

➢ May adjust standard tables to better fit the actual experience, if the actual data is credible.

➢ Different tables may be appropriate for different groups (e.g., TRA, PERA, MSRS)
Differences in Mortality

Mortality varies by geography, gender, marital status, education and socio-economic status.

Darker colors indicate longer life expectancy.
➢ ASOP 35 requires the actuary to make a specific assumption regarding future mortality improvements, even if the assumption is none.

➢ TRA has been using the generational approach, where reductions in mortality rates are reflected in each future year, since 2010.

➢ This is the preferred approach in the actuarial community, and we recommend its continued use.
In 2019, the Society of Actuaries published the Pub-2010 family of mortality tables.

- These tables are based on public plan data which had been excluded in prior tables.
- Tables for General, Safety, and Teacher groups.
- Tables for healthy retirees, disabled retirees, contingent beneficiaries, and active employees.

In the last study, the current tables were still a good fit, so we did not recommend a change. At this point, the fit of the current assumption is not as good, so we recommend updating to the Pub-2010 tables.
For healthy retiree mortality, we recommend the PubT-2010(A) Retiree Mortality Table, males set forward one year and females unadjusted, projected generationally with the MP-2021 projection scale.

- PubT – this is the Teacher table.
- (A) – Above median table – reflects TRA population has better mortality experience than average group.
- Males set forward one year: use the age 66 rate for a 65-year-old.
- MP-2021 – the most recent generational projection scale.

For disabled retirees, beneficiaries, and actives, we have much less data and so we recommend using the corresponding tables with the same adjustment.
While the current rates are close to actual experience, moving to the new tables improved the A/E ratio from 104% to 99%.
While the current rates are close to actual experience, moving to the new tables improved the A/E ratio from 106% to 103%.
## Life Expectancy at Age 60 Using New Assumptions

<table>
<thead>
<tr>
<th>Year of Age 60</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2025</td>
<td>86.9</td>
<td>89.7</td>
</tr>
<tr>
<td>2035</td>
<td>87.7</td>
<td>90.4</td>
</tr>
<tr>
<td>2045</td>
<td>88.4</td>
<td>91.0</td>
</tr>
<tr>
<td>2055</td>
<td>89.0</td>
<td>91.6</td>
</tr>
<tr>
<td>2065</td>
<td>89.7</td>
<td>92.2</td>
</tr>
</tbody>
</table>
➢ Important assumption from cost perspective because it anticipates when benefit payments start.

➢ Earlier commencement:
  ▪ Results in longer payment period.
  ▪ Shorter period to accumulate assets.
  ▪ Causes liabilities/costs to be higher if retirement assumption reflects benefit commencement at younger ages.

➢ Measures retirement directly from active status.

➢ Typically, separate assumptions for various types of retirement.
  ▪ Early with reduced benefits.
  ▪ Normal retirement with unreduced benefits.
Minor adjustments improve the fit while leaving the A/E ratio unchanged at 99%.
Recent experience indicates higher rates at 68 and 69. The A/E ratio went from 104% to 100% as a result. Note that the impact of the change to the Normal Retirement Age in 2023 law is not yet reflected.
The A/E ratio is 89%, but the fit is generally good, so we do not suggest any changes.
Observed retirement rates have been above expected, so we propose changes moving the A/E ratio from 106% to 92% while improving the fit. Note that the impact of the change to the Normal Retirement Age in 2023 law is not yet reflected.
Termination of Employment Assumption

- Service-based assumption was first adopted eight years ago (the study before the last study).

- In the last study, we partially recognized the actual experience and reduced the rates in the early durations for both male and female assumptions.

- The current experience indicates that there should be still more reduction in the early durations.

- We also propose some small increases in rates around 20-25 years of service.
To partially reflect experience, we are reducing the rates at lower service durations and making some slight increases at higher durations. As a result, the A/E ratio changed from 86% to 87%.
To partially reflect experience, we are reducing the rates at lower durations of service and making some slight increases at higher durations. As a result, the A/E ratio changed from 84% to 86%.
Total salary scale includes wage inflation (discussed earlier) and a “merit” component reflecting increases based on service, promotions, etc.

The graph below shows the observed increases compared to the current assumption adjusted for actual CPI. Since the current assumption reasonably approximates observed experience, we are not recommending any changes.
Other Assumptions

➢ Disability is very rare. We recommend reducing rates above age 45.

➢ Minor assumptions:
  ▪ Probability of marriage – no change.
  ▪ Age difference in spouses – no change.
  ▪ Optional form election – some small refinements.
Cost Impact of Assumption Changes

- Based on 7/1/22 actuarial valuation results.
  - Investment return assumption will change with 7/1/23 valuation.
  - All other changes expected to be effective with the 7/1/24 valuation.

### Comparison of Valuation Results and Costs

<table>
<thead>
<tr>
<th>$( in millions)</th>
<th>July 1, 2022 Valuation (Baseline)</th>
<th>With 7.0% Investment Return Assumption Change</th>
<th>With All Assumption Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuarial Accrued Liability (AAL)</td>
<td>$31,616</td>
<td>$33,600</td>
<td>$32,681</td>
</tr>
<tr>
<td>Actuarial Assets</td>
<td>25,926</td>
<td>25,926</td>
<td>25,926</td>
</tr>
<tr>
<td>Unfunded AAL (UAAL)</td>
<td>$5,690</td>
<td>$7,674</td>
<td>$6,755</td>
</tr>
<tr>
<td>Funded Ratio</td>
<td>82.00%</td>
<td>77.16%</td>
<td>79.33%</td>
</tr>
<tr>
<td>Normal Cost Rate</td>
<td>9.23%</td>
<td>10.50%</td>
<td>10.33%</td>
</tr>
<tr>
<td>UAAL Amortization Rate</td>
<td>6.21%</td>
<td>7.96%</td>
<td>7.01%</td>
</tr>
<tr>
<td>Expense Rate</td>
<td>0.28%</td>
<td>0.28%</td>
<td>0.28%</td>
</tr>
<tr>
<td>Total Actuarial Rate</td>
<td>15.72%</td>
<td>18.74%</td>
<td>17.62%</td>
</tr>
<tr>
<td>Statutory Contribution Rate</td>
<td>16.82%</td>
<td>16.82%</td>
<td>16.82%</td>
</tr>
<tr>
<td>Sufficiency/(Deficiency)</td>
<td>1.10%</td>
<td>(1.92%)</td>
<td>(0.80%)</td>
</tr>
</tbody>
</table>
Final Comments

➢ Experience studies are an important part of system governance, helping to assure the reasonableness of projections of the future.

- Assumptions that are too far from reality will result in non-level contribution patterns.
- Actual experience will drive the cost results over time.
- Valuation process is self-adjusting each year.

➢ Continue to study actual experience on a regular basis and change assumptions, as necessary.

➢ Generally, the findings in the study are used to refine the current assumptions, with greater adjustment if consecutive studies indicate a continuing trend.
Estimates were calculated based on the 2022 valuation with adjustments for the proposed assumptions – the actual 7/1/2023 and 7/1/2024 valuation results will be different. Please refer to the 2022 valuation report for additional disclosures and explanations.

The actuaries who prepared these results, Patrice Beckham, FSA, EA, MAAA, FCA, Brent Banister, FSA, EA, MAAA, FCA, and Ben Mobley, ASA, EA, MAAA, FCA, are members of the American Academy of Actuaries and are qualified to render the opinions presented.
Minnesota Teachers Retirement Association
Estimated July 1, 2023 Valuation Results

Presented by:
Cavanaugh Macdonald Consulting, LLC

August 16, 2023
Recap of Last Year’s Valuation
Actuarial Value of Assets Basis, 7.5% Return Assumption

July 1, 2022

Unfunded Actuarial Accrued Liability (UAAL) $5.7 billion
Funding Ratio 82.0%

As % of Pay

Normal Cost (with expenses) 9.51%
Amortization of UAAL 6.21%
Total Required Contribution 15.72%
Member and Employer Contributions 16.82%
Contribution Sufficiency/(Deficiency) 1.10%

Note: if future scheduled contribution increases are considered, the contribution sufficiency increases to 1.55%
Changes Since Last Year’s Valuation

➢ Omnibus Pension Finance Bill (HF 3100)
  ▪ Investment return assumption lowered from 7.5% to 7.0%
  ▪ $145 million allocated to pay down UAAL
  ▪ State payment for 13th check

➢ Tax Finance & Policy Bill (HF 1938)
  ▪ Changes effective July 1, 2025
  ▪ Tier II normal retirement age lowered from 66 to 65
  ▪ Increased employer and employee contributions
  ▪ UAAL amortization date extended to June 30, 2053

➢ 2023 experience study assumption changes effective with the July 1, 2024 valuation
Market value of assets at 6/30/2023 is $26.7 billion (about +9% return for FY 2023)

Contributions and benefit payments for FY 2023 were estimated from the 2022 valuation since actual amounts are unknown at this time.

Actuarial value of assets uses a smoothing mechanism

- Net deferred loss (market value < actuarial value of assets) at 7/1/2022 was about $334 million.
- Preliminary net deferred loss (market value < actuarial value of assets) at 7/1/2023 is about $184 million.
Valuation utilizes an asset smoothing method which results in the “actuarial value of assets” for valuation measurements.

As of July 1, 2023, the preliminary deferred experience (difference between actuarial and market value of assets) yet to be recognized totals $(184) million:

<table>
<thead>
<tr>
<th>CY Ending</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millions $</td>
<td>235</td>
<td>(2,279)</td>
<td>2,007</td>
<td>(147)</td>
</tr>
</tbody>
</table>
All actuarial assumptions, other than investment return, are assumed to be met for FY 2023 (no actuarial gain/loss from actual demographic experience).

Total covered payroll, used in estimating the July 1, 2023 valuation results, is based on the payroll growth assumption used in the 2022 valuation.

Reflects changes from recent legislation that will be reflected in the 2023 valuation:

- 7% investment return assumption
- Change in Tier 2 Normal Retirement Age to 65

Does not reflect other proposed assumptions which will be effective with 2024 valuation if approved.
<table>
<thead>
<tr>
<th></th>
<th>July 1, 2022 (7.5%)</th>
<th>July 1, 2023 (7.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuarial Accrued Liability</td>
<td>31.6</td>
<td>35.0</td>
</tr>
<tr>
<td>Asset Value</td>
<td>25.9</td>
<td>26.9</td>
</tr>
<tr>
<td>Unfunded Actuarial Accrued Liability (UAAL)</td>
<td>5.7</td>
<td>8.1</td>
</tr>
<tr>
<td><strong>Funded Ratio</strong></td>
<td>82.0%</td>
<td>76.8%</td>
</tr>
<tr>
<td>Normal Cost (with expenses)</td>
<td>9.51%</td>
<td>11.24%</td>
</tr>
<tr>
<td>Amortization of UAAL through 2048</td>
<td>6.21%</td>
<td>8.35%</td>
</tr>
<tr>
<td><strong>Total Required Contribution</strong></td>
<td>15.72%</td>
<td>19.59%</td>
</tr>
<tr>
<td>Member plus Employer Contributions</td>
<td>16.82%</td>
<td>17.25%</td>
</tr>
<tr>
<td><strong>Contribution Surplus/(Deficiency)</strong></td>
<td>1.10%</td>
<td>(2.34%)</td>
</tr>
<tr>
<td>Ultimate Contribution Surplus/(Deficiency)</td>
<td>1.55%</td>
<td>(1.34%)</td>
</tr>
</tbody>
</table>

Note: Numbers may not add due to rounding
## Estimated Actuarial Status – July 1, 2023

### Market Value of Assets Basis

<table>
<thead>
<tr>
<th>$ in Billions, Contributions as % of pay</th>
<th>July 1, 2022 (7.5%)</th>
<th>July 1, 2023 (7.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuarial Accrued Liability</td>
<td>31.6</td>
<td>35.0</td>
</tr>
<tr>
<td>Asset Value</td>
<td>25.6</td>
<td>26.7</td>
</tr>
<tr>
<td>Unfunded Actuarial Accrued Liability (UAAL)</td>
<td>6.0</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>Funded Ratio</strong></td>
<td><strong>80.9%</strong></td>
<td><strong>76.3%</strong></td>
</tr>
<tr>
<td>Normal Cost (with expenses)</td>
<td>9.51%</td>
<td>11.24%</td>
</tr>
<tr>
<td>Amortization of UAAL through 2048</td>
<td>6.57%</td>
<td>8.54%</td>
</tr>
<tr>
<td><strong>Total Required Contribution</strong></td>
<td><strong>16.08%</strong></td>
<td><strong>19.78%</strong></td>
</tr>
<tr>
<td>Member plus Employer Contributions</td>
<td>16.82%</td>
<td>17.25%</td>
</tr>
<tr>
<td><strong>Contribution Surplus/(Deficiency)</strong></td>
<td><strong>0.74%</strong></td>
<td><strong>(2.53%)</strong></td>
</tr>
<tr>
<td>Ultimate Contribution Surplus/(Deficiency)</td>
<td>1.19%</td>
<td><strong>(1.53%)</strong></td>
</tr>
</tbody>
</table>

Note: Numbers may not add due to rounding
Projection of Future Funding Results

➢ Uses the 2022 valuation projection model, reflecting actual FY 2023 asset return
  ▪ Results reflect actuarial (smoothed) value of assets

➢ Reflects assumption changes:
  ▪ Investment return of 7% as set in statute for 2023 valuation
  ▪ Recommend assumptions effective in 2024 valuation

➢ Scheduled benefit and funding changes:
  ▪ Scheduled employer and member contribution increases (9.5% and 8.0%)
  ▪ State contribution of $145 million to pay down unfunded liability
  ▪ Active Tier II member Normal Retirement Age change to 65 effective July 1, 2025
Future returns on the market value of assets, beginning in FY 2024, are assumed to be 7.0% (assumed investment return effective June 30, 2023) unless otherwise noted.

Expected results assume:

- All actuarial assumptions are met in future years
- No future changes to the scheduled contribution rates beyond those already scheduled in current law. Note: the extended amortization to 2053 does not change this.
- No future change to the benefit provisions occurs beyond those already passed in the 2023 session.
- No future changes to actuarial assumptions or methods after 2024 valuation.
If all assumptions are met, including 7.0% return in all future years, the funded ratio is projected to reach 100% in the 2047 valuation.

Note: the funded ratio uses the actuarial value of assets.
If the investment return during FYE 2024 is 0% and 7.0% thereafter, the funded ratio is projected to be 93% in 2052. However, if the investment return during FYE 2024 is -10% and 7.0% thereafter, statutory contributions are not expected to be sufficient to fund the System, resulting in a 72% funded ratio in 2052.

Note: the funded ratio uses the actuarial value of assets.
➢ These results reflect the preliminary asset return information for FY 2023, as provided by TRA.

➢ Estimated results were based on the 2022 valuation data and assumptions – the actual 7/1/2023 valuation results will be different.

➢ Projections are based on many assumptions. To the extent these are not met, results could vary dramatically, especially over time.

➢ Future projections are developed to compare and evaluate outcomes under various scenarios and are not intended to predict future valuation results.

➢ The actuaries who prepared these results, Patrice Beckham, FSA, EA, MAAA, FCA, Brent Banister, FSA, EA, MAAA, FCA, and Ben Mobley, ASA, MAAA, FCA are members of the American Academy of Actuaries and are qualified to render the actuarial opinions presented herein.
‘This page intentionally left blank’
Actuarial Standard of Practice No. 4

Presented by:
Cavanaugh Macdonald Consulting, LLC
August 16, 2023
Actuarial Standards of Practice (ASOPs)

➢ Actuarial Standards of Practice
  ▪ Provide practicing actuaries with principle-based guidance for actuarial work
  ▪ Credentialed actuaries must follow ASOPs
  ▪ 57 ASOPs that vary with practice area, e.g., life, health, casualty and pension work

➢ ASOPs specific to pension plans
  ▪ ASOP 4: Measuring Pension Obligation
  ▪ ASOP 27/35 – Assumption Setting
  ▪ ASOP 51 – Risk information
  ▪ Others
Disclose Low-Default Risk Obligation Measure (LDROM)

Disclose Reasonable Actuarially Determined Contribution (ADC)
  - New guidance on amortization of the unfunded actuarial accrued liability

Assess implications of Contribution Allocation Procedure (CAP) or Funding Policy

Other changes
  - Output smoothing methods
  - Addressing contribution lag
  - Gain/loss analysis
Options for calculating the LDROM have different interpretations

Cavanaugh Macdonald will use a quasi-plan termination measurement

- Unit credit cost method
  - Value only the benefits actually earned to date (accrued benefits)
  - No future salary increases or service reflected

- Discount rate uses the Russell-FTSE index, published by the Society of Actuaries
  - Based on high quality corporate bonds
  - Rates vary by duration

ASOP 4 only requires the liability be disclosed, not unfunded liability, funded ratio or contribution rate

Will be included in Risk Section of the valuation report
Spot rate curves will vary year-to-year, as shown below. This will be a volatile measure which may limit its usefulness.
Must calculate and disclose a reasonable actuarially determined contribution (ADC) except when assumptions/methods are set by law

An ADC is reasonable if

- “Reasonable assumptions” rules under ASOPs 27 and 35 are met
- Actuarial cost method meets the ASOPs requirements
- Asset smoothing method is consistent with ASOP 44
- Amortization method is consistent with ASOP 4, including no perpetual negative amortization (increasing dollar amount of UAAL)
- Contribution allocation procedure results in the plan accumulating sufficient assets to make benefit payments when due
  - Assuming all assumptions are met and the actuarially determined contribution is made
- Output smoothing method, if any, meets ASOP 4
New Guidance on UAAL Amortization

➢ Each individual base either
  ▪ Fully amortized in a reasonable period of time or
  ▪ Reduces outstanding balance by reasonable amount each year

➢ Similar conditions on total amortization payments
  ▪ Fully amortized in a reasonable period of time or
  ▪ Total payments must reduce outstanding balance by a reasonable amount within a sufficiently short period of time

➢ Goal of this is to encourage meaningful paydown of the UAAL
Some factors in determining “reasonable period” or amount include:

- Method open or closed
- Source of the amortization base
- Pattern of payments including how long until payments exceed interest on the outstanding balance
- Base positive or negative?
- Duration of the actuarial accrued liability
- Average remaining service lifetime of active members
- Funded status or period to plan insolvency

Professional judgement is involved in evaluating the amortization policy.
The statutory base for TRA is quite long and the pattern of resetting it suggests that this is not a reasonable period.

The layered approach proposed in the experience study was designed to meet the new ASOP 4 parameters.

We will calculate both:

- The statutory ADC and show the corresponding contribution deficiency.
- The alternative Reasonable ADC.
Considerations in Selecting Contribution Allocation Procedure

➢ Balance among benefit security, intergenerational equity, and contribution stability

➢ Timing and duration of expected benefit payments

➢ Nature and frequency of plan changes

➢ Input from plan sponsor such as funding goals like reaching full funding within a specified timeframe
Implications of CAP or Funding Policy

➢ Qualitative assessment of contribution allocation policy/funding policy on plan’s expected future contributions and funded status

➢ Estimate how long before contributions determined by the Funding Policy are expected to exceed normal cost plus interest on the UAAL

➢ Estimate when UAAL is expected to be fully amortized

➢ Assess whether the funding policy is significantly inconsistent with accumulating assets adequate to make future benefit payments when due
  ▪ Estimate asset depletion date, if applicable
➢ TRA is primarily funded with a fixed contribution rate.
   ▪ Some additional state appropriations.

➢ The report disclosures will reflect the Funding Policy since there is not a Contribution Allocation Procedure that is used.
Combined Funds Change in Market Value ($Millions)

<table>
<thead>
<tr>
<th></th>
<th>One Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Funds</td>
<td></td>
</tr>
<tr>
<td>Beginning Market Value</td>
<td>$83,246</td>
</tr>
<tr>
<td>Net Contributions</td>
<td>-680</td>
</tr>
<tr>
<td>Investment Return</td>
<td>3,087</td>
</tr>
<tr>
<td>Ending Market Value</td>
<td>85,653</td>
</tr>
</tbody>
</table>

The change in market value of the Combined Funds since the end of last quarter is due to net contributions and investment returns.

Performance (Net of Fees)

The Combined Funds' performance is evaluated relative to a composite of public market index and private market investment returns. The Composite performance is calculated by multiplying the beginning of month Composite weights and the monthly returns of the asset class benchmarks.

<table>
<thead>
<tr>
<th></th>
<th>Qtr</th>
<th>FYTD</th>
<th>1 Yr</th>
<th>3 Yr</th>
<th>5 Yr</th>
<th>10 Yr</th>
<th>20 Yr</th>
<th>30 Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Funds</td>
<td>3.7%</td>
<td>8.9%</td>
<td>8.9%</td>
<td>9.9%</td>
<td>8.2%</td>
<td>8.8%</td>
<td>8.5%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Combined Funds -</td>
<td>3.6%</td>
<td>8.7%</td>
<td>8.7%</td>
<td>9.5%</td>
<td>8.0%</td>
<td>8.6%</td>
<td>8.3%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Composite Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excess</td>
<td>0.1%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.5%</td>
<td>0.3%</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Asset Growth

Exhibit 4A
The Combined Funds actual asset mix relative to the Strategic Asset Allocation Policy Target is shown below. Any uninvested portion of the Private Markets allocation is held in Public Equity.

<table>
<thead>
<tr>
<th>(Millions)</th>
<th>Actual Mix</th>
<th>Policy Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Equity</td>
<td>$43,265</td>
<td>50.5%</td>
</tr>
<tr>
<td>Total Fixed Income</td>
<td>20,597</td>
<td>24.0%</td>
</tr>
<tr>
<td>Private Markets - Total</td>
<td>21,791</td>
<td>25.4%</td>
</tr>
<tr>
<td>Private Markets - Invested</td>
<td>21,580</td>
<td>25.2%</td>
</tr>
<tr>
<td>Private Markets - Uninvested</td>
<td>211</td>
<td>0.2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>85,653</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Composite Index Comparison**

The Combined Funds Composite is set as the Strategic Asset Allocation Policy Target. Asset class weights for Private Markets - Invested and Private Markets - Uninvested are reset at the start of each month. The Combined Funds Composite weighting shown below is as of the first day of the quarter.

<table>
<thead>
<tr>
<th>Policy Weight</th>
<th>Market Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Equity</td>
<td>50.0% Public Equity Benchmark</td>
</tr>
<tr>
<td>Total Fixed Income</td>
<td>25.0% Total Fixed Income Benchmark</td>
</tr>
<tr>
<td>Private Markets - Invested</td>
<td>25.0% Private Markets</td>
</tr>
<tr>
<td>Private Markets - Uninvested</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Public Equity 50.0%
Private Markets - Invested 25.0%
Total Fixed Income 24.0%
Private Markets - Uninvested 0.0%
Minnesota Teachers Retirement Association Fiduciary Topics

August 16, 2023
Presented By: Audra Ferguson and Robert Gauss
## Agenda

- Fiduciary Basics
- Fiduciary Duties
- Recent Fee Litigation
- Best Practices for Managing Liability
- Other Topics to Watch
Fiduciary Basics
Fiduciary Training

Fiduciary training helps fiduciaries to:

• Understand their fiduciary responsibilities
• Manage liabilities from a legal and compliance perspective
Fiduciary Defined

Look to function and designation

- **Function**: Discretionary administrative or investment decisions related to the plan
- **Designation**: Named in a plan, trust document, or statute as a fiduciary
- **Trustees** – both by function and designation

Internal Revenue Code § 4975(e)(3); ERISA § 3(21)
Who is a Fiduciary?

• The Plan Sponsor determines the scope of authority of the fiduciaries and gives authority to TRA by statute.
• Minnesota state law names the following individuals as fiduciaries:
  • any member of the TRA Board
  • the chief administrative officer of TRA (e.g., the Executive Director)
• any member of the State Board of Investment or the Investment Advisory Council
  Minn. Stat. § 356A.02(1)
Who is **not** a Fiduciary?

- Subject to contracts, attorneys, accountants, actuaries generally are not fiduciaries when acting in professional capacities.
- Third party administrators and recordkeepers are **not** fiduciaries if solely performing ministerial functions.
- Typically, vendor agreements will affirmatively state that the vendor is not a fiduciary.
- Exception if providing investment advice to participants (e.g., through brokers, relationship managers, or third parties like Ibbotson or Morningstar)
- Exception if providing rollover advice to participants.
## Sources of Fiduciary Duty

|-------------|-----------|------------|-----------------------------------------|
| • Internal Revenue Code  
• ERISA (not directly applicable, but excellent resource) | • Statutory Fiduciary Rules  
• State Constitution | • Restatement (Third) of Trusts  
(collection of common law)  
• Uniform Management of Public Employee Retirement Systems Act (UMPERSA) (even if not adopted by State - excellent resource) | • Plan Document  
• Statutes  
• Administrative Code  
• Trust Document  
• Board Policies and Resolutions  
• Board Governance Manual |
Typical Fiduciary Activities:

- Appointing other plan fiduciaries, *e.g.*, investment advisor
- Delegating responsibilities to other fiduciaries
- Selecting/monitoring plan investments
- Acquiring/disposing of plan assets
- Interpreting plan provisions
- Making decisions under the plan
Fiduciary Activities – State Law:

- Under state law, fiduciary activities include, but are not limited to:
  - the investment and reinvestment of plan assets
  - the determination of benefits
  - the determination of eligibility for membership or benefits
  - the determination of the amount or duration of benefits
  - the determination of funding requirements or the amounts of contributions
  - the maintenance of membership or financial records
  - the expenditure of plan assets; and
  - the selection of financial institutions and investment products

  Minn. Stat. § 356A.02, subd. 2
Fiduciary Activities – TRA Board:

• Under state law, the TRA Board is not involved in the investment of Plan assets.
• Investment authority rests with the State Board of Investment. Minn. Const. Art. XI, § 8.
• An Investment Advisory Council is established by statute. Minn. Stat. § 11A.08.
  • The TRA Executive Director is a member of this Council.
Fiduciary Duties

Duty of Loyalty

Duty of Prudence

Duty to Follow Plan Documents
Duty of Loyalty
Duty of Loyalty

Duty to act solely in the interest of participants and beneficiaries

Duty to act for the exclusive purpose of providing benefits or paying reasonable plan expenses

Duty to act independently and without conflicts of interest

Duty to act impartially among differing interests
Duty of Loyalty

“Under the trust instrument it [must be] impossible, at any time prior to the satisfaction of all liabilities with respect to employees and their beneficiaries under the trust, for any part of the corpus or income to be (within the taxable year or thereafter) used for, or diverted to, purposes other than for the exclusive benefit of his employees or their beneficiaries.” Code § 401(a)(2)

This is a tax qualification requirement for retirement plans.
Duty of Loyalty: Exclusive Benefit Rule

- Minn. Stat. § 356A.05 incorporates the duty of loyalty, providing that a fiduciary’s activities must be carried out solely:
  - to provide authorized benefits to plan participants and beneficiaries;
  - to incur and pay reasonable and necessary administrative expenses; or
  - to manage the Plan in accordance with the purposes and intent of the plan document.

- These duties must be carried out faithfully, without prejudice, and in a manner consistent with law and the plan document.

- Minn. Stat. § 356A.04, subd. 1 provides that the fiduciary’s duty is to the Plan’s participants, the taxpayers, and the state of Minnesota.
Duty of Loyalty: Independence

A fiduciary has a duty to act in the interest of the members and beneficiaries as if there were no other competing interests to protect.

- Cannot act for fiduciary's own personal or business interest.
- Cannot be influenced by the interest of any third person.
- Must set aside the interests of the party that appoints the fiduciary.
- Not an agent for the party that appoints fiduciary.

Requires undivided loyalty to participants and beneficiaries.
Duty of Loyalty: Independence

A trustee who wears “two hats” can only wear the trustee’s fiduciary hat when acting in fiduciary capacity as TRA Board member.

Interests relating to the “other hat”—be it union representative, teacher, retiree, state agency employee—must be set aside. The Board member can only act in the independent, undivided interests of the members and beneficiaries.

Board members are not there to represent the interests of the group that elected or appointed them.
Duty of Loyalty: Independence

"Many forms of conduct permissible in a workday world for those acting at arm’s length, are forbidden to those bound by fiduciary ties. A trustee is held to something stricter than the morals of the marketplace."

- Meinhard v. Salmon, 164 NE 545, 546 (NY Ct. App. 1928)

"Independence is required because it permits trustees to perform their duties in the face of pressure from others who may not be subject to such obligations."

- UMPERSA Comments on § 5
Duty of Loyalty: Impartiality

- A fiduciary owes a duty of loyalty to all participants and beneficiaries, and respecting that duty requires the fiduciary to be impartial among differing interests.

- Prevents application of assets for personal use, self-dealing, competition with trust, or improper benefit.
Duty of Loyalty: Impartiality

Balance the interests of retirees, active, and inactive participants

Balance roles with regard to different types of participants (public and charter school teachers, administrators, higher education faculty, etc.)
Duty of Impartiality

UMPERSA Commentary: "Differing interests are inevitable in the retirement system setting. Differences can arise between retirees and working members, young members and old, long-and short-term employees, and other groupings of those with interests in the retirement system. The duty of impartiality does not mean that fiduciaries must accommodate such interests according to some notion of absolute equality. The duty of impartiality … requires that such decisions be made carefully and after weighing the differing interests."
"If a trust has two or more beneficiaries, the trustee shall administer the trust impartially, giving due regard to the beneficiaries' respective interests." Minn. Stat. § 501C.0803

“The precise meaning of the trustee’s duty of impartiality and the balancing of competing interests and objectives inevitably are matters of judgment and interpretation. Thus, the duty and balancing are affected by the purposes, terms, distribution requirements, and other circumstances of the trust, not only at the outset but as they may change from time to time.” Norwest Bank Minn. N., N.A. v. Beckler, 663 N.W.2d 571, 581 (Minn. App. 2003) (quotation omitted); see also In re Schauer, No. A18-0969, 2019 BL 123508 (Minn. Ct. App. Apr. 8, 2019).

"So long as the trustees act in good faith, from proper motives, and within the bounds of reasonable judgment, the court will not interfere with their decisions." United States v. O'Shaughnessy, 517 N.W.2d 574, 577 (Minn. 1994).
Duty of Impartiality – Oregon Supreme Court Case

• The Oregon Supreme Court has held that common law trust principles require a public pension board to consider not only the amount of income or near-term benefits to beneficiaries, but also the need to preserve and protect the fund corpus.

• The Court noted this is particularly important where the fund has tens of thousands of beneficiaries in widely varying circumstances, including active participants just entering service to active participants close to retirement, as well as retirees in various stages of retirement. The Board must fulfill its duty of impartiality.

• “[The Board] must first comply with specific statutory mandates and prohibitions and, when exercising its discretion beyond those requirements, must consider the diverse interests of PERS and all PERS beneficiaries.” White v. Public Employees Retirement Board, 268 P.3d 600 (Or. 2011)(Emphasis in the original.)
Duty of Loyalty - Plan Expenses

• A fiduciary shall discharge duties with respect to a plan incurring only costs that are appropriate and reasonable to administer the plan.

• Only reasonable plan expenses can be paid from trusts.
Duty of Prudence
Duty of Prudence

Duty to act with the care, skill, prudence, and diligence that a prudent person would exercise in managing their own affairs

Duty to be informed

Duty to delegate responsibilities outside of experience

Duty to diversify investments
Minn. Stat. § 356A.04, subd. 2 incorporates the duty of prudence (applying the prudent person standard):

“...shall act in good faith and shall exercise that degree of judgment and care, under the circumstances then prevailing, that persons of prudence, discretion, and intelligence would exercise in the management of their own affairs, not for speculation, considering the probable safety of the plan capital as well as the probable investment return to be derived from the assets.”

State law also:

- requires that the Plan assets be diversified (Minn. Stat. § 356A.06, subd. 2);
- provides a process for delegation (Minn. Stat. § 356A.10, subd. 3); and
- establishes a fiduciary education obligation and program (Minn. Stat. § 356A.13)
The fiduciary has a duty to **be informed** with respect to the decisions he or she is required to make.

**Regularly attend meetings.**

**Review materials provided at meetings.**

Request materials and ask questions to ensure adequate information before taking action.

Be familiar with governing documents, including the statutes and administrative guidance applicable to the plans.

Secure and consider advice of experts on reasonable basis but exercise independent judgment.
Duty of Prudence: Delegation

"If you don't know jewelry, know the jeweler."

- Warren Buffett
Duty of Prudence: Delegation

A fiduciary can delegate functions that a prudent fiduciary acting in a like capacity and familiar with those matters could properly delegate.

A fiduciary has a duty to delegate responsibilities outside of the fiduciary’s expertise.

Delegation should not be overly broad and must be consistent with duties of care and caution, e.g., terms of delegation must be prudent.
Duty of Prudence: Delegation

Documentation should be clear and consistent.

- Set out specific duties in writing
- Ensure all delegated acts are approved by the fiduciary
- Require the delegate accepts all assigned duties

Delegation is a fiduciary act.

- Imposes duties of care, skill, and caution on the trustee and administrator in selecting an agent, in establishing the terms of the delegation, and in reviewing the agent's compliance.
Duty of Prudence: Delegation

Prudent selection and retention of expertise.

May reasonably rely on expertise.

Failure to follow expertise could be a violation of fiduciary duties.

- If a fiduciary does not have the knowledge/skills, they must consult/hire an expert pursuant to a prudent process.

Retain reasonable oversight and ask appropriate questions.
Affirmative Duty to Follow Plan Document

Fiduciary duty to administer a plan in good faith in accordance with its written terms – "by the book."

| Plan includes the statutes, administrative rules, and administrative procedures/policies | Consistent interpretation and administration | Timely update for legally required changes | Timely correct plan errors |

Burden on fiduciary to understand the governing documents of the plans, and the context in which the plans exist.
Negative Duties: Prohibited Transactions

<table>
<thead>
<tr>
<th>A fiduciary may not:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deal with plan assets in his/her own interest.</td>
</tr>
<tr>
<td>Pay unreasonable compensation for services performed.</td>
</tr>
<tr>
<td>Make a purchase for more than adequate consideration or a sale for less than adequate consideration.</td>
</tr>
<tr>
<td>Act on behalf of a party whose interests are contrary to the plan or participants.</td>
</tr>
<tr>
<td>Receive anything of value from any party in connection with a transaction involving plan assets.</td>
</tr>
</tbody>
</table>
Key Takeaways

Highest duty under the law.

Objective standard:
- Prudent “person” standard.
- Good faith is not sufficient.
- If you don’t know, learn or hire an expert.

If it is not documented, it cannot be substantiated.
Fiduciary Liability
Fiduciary Liability – State Law

Fiduciaries may be personally liable for a fiduciary breach. The Board may indemnify fiduciaries. Minn. Stat. § 356A.11

A fiduciary breach occurs if a fiduciary violates the general standard of fiduciary conduct (i.e., prudent person standard) in carrying out the activities of a fiduciary (or if the fiduciary engages in a prohibited transaction).

Minn. Stat. § 356A.09
Fiduciary Liability

Personal liability for breach of fiduciary duty.

- Restore to the plan any losses resulting from a breach of fiduciary duty.
- Restore to the plan any profits made by the fiduciary though use of plan assets.
- Other equitable or remedial relief as the court may deem appropriate.

May be liable for a cofiduciary’s breach of fiduciary duty if a fiduciary enables another fiduciary to commit the breach, knowingly participates in or conceals the breach, or discovers the breach but does not take steps to remedy.
Best Practices for Managing Liability
Sovereign Immunity

State Constitution or statutes may provide some protection
The Focus On Process

- Focus on **procedural prudence**
- Courts have held the test of prudence is one of conduct and process, and not one of result
  - "Trustees and fiduciaries are not insurers. Not every investment or management decision will turn out in the light of hindsight to have been successful. Hindsight is not the relevant standard."

  UMPERSA § 10(1); see also Restatement (Third) of Trusts
The Focus On Process

• There is no one "right" way to achieve procedural prudence
• Important to have a good, documented process
• Critical to follow that process
• Critical to retain expertise where needed and understand expert advice
• Know and follow plan advice
Managing Fiduciary Risk

Adopt written prudent processes and procedures and follow them:

• Governance Policy
• Conflicts of Interest Policy
• Ethics Policy
• Charters for Committees
• Investment Policy Statement
• Cyber and Data Security Policy

Consider facts and circumstances that fiduciary knows or should know are relevant.
Managing Fiduciary Risk

• Document decisions and the basis for decisions
• Conduct periodic training of fiduciaries
• Properly allocate fiduciary roles in writing
• Conduct financial and management audits
• Provide accurate member communications
Managing Fiduciary Risk

For delegated duties:

• Properly select those to whom duties are delegated *e.g.*, monitoring performance of actuary and supervisory staff

Retain expertise where needed

Consider fiduciary insurance for the Board

Avoid conflicts of interest
Managing Fiduciary Risk

- Due diligence in selecting and monitoring actuaries/other consultants and advisors
- Prudently select and monitor investments and actuarial assumptions
- Understand plan expenses
- Get competitive bids from service providers
- Negotiate contracts with service providers
Other Topics to Watch
Cybersecurity

On April 12, 2021, the DOL issued three pieces of cybersecurity guidance for retirement plans clearly stating that cybersecurity is a fiduciary issue.

Several recent lawsuits against recordkeepers as a result of theft of plan accounts.

- Focus on call center vulnerabilities.
- Request restoration of account.
- Alleged fiduciary duty to put in place adequate cyber theft protection.

Some recordkeepers are now covering losses due to unauthorized activity so long as member safeguards account access information and reports fraud immediately.
ESG Considerations

• Next area of expected litigation is ESG = Environmental, Social, Governance; has attracted local and national political attention.

• ESG investing is a model of investing where investments are selected in part for their collateral economic or social benefits apart from the investment return to the retirement plan investor.

• Litigation anticipated regarding whether ESG funds are truly ESG and/or whether ESG funds are a prudent investment.

• The Minnesota State Board of Investments (“SBI”) has information regarding ESG investing on their website.
Correction of Overpayments

Under the SECURE 2.0 Act of 2022, effective Dec. 29, 2022, qualified plans are provided flexibility in regard to seeking recovery of inadvertent benefit overpayments.

A qualified plan such as TRA is not disqualified as a result of an inadvertent benefit overpayment, but fiduciary obligations still apply.

It is important to apply consistent correction procedures for similarly situated participants.

We anticipate the IRS will issue further guidance on recovery of inadvertent benefit overpayments.
Questions?

Audra Ferguson  
317-236-2249  
audra.ferguson@icemiller.com

Robert L. Gauss  
317-236-2133  
gauss@icemiller.com
TRA:
Trends and Comparisons
Agenda

1. Membership
2. Financial Health
   1. Statistics
   2. Plan Maturity
3. Benefits
Membership
TRA Membership
7/1/2022

- Active: 69,891
- Inactive: 84,308
- Benefit Recipients: 56,715

TRA had 210,914 members as of 7/1/2022.

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
TRA Membership
FY 2013 – FY 2022

• Total membership increased by 20% in 10 years.
• TRA did not experience significant membership adjustments (or cost savings or expenses) as a result of the COVID-19 pandemic.

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
In FY 2022, the average age at which TRA members across both tiers retired was 63. This has remained consistent over the past 10 years.

The average annuitant retired with 23 years of service.
As of 7/1/2023, TRA had 3,476 retirees aged 90+, 84 of whom were aged 100+.

Source: FY 2022 Actuarial Valuation, Cavanaugh Macdonald
Retiree Age Distribution

TRA Retiree Age Trends
FY 2013 – FY 2024

- Many factors affect mortality rates. TRA members tend to have long life expectancies compared to other demographic groups.
- The longer an annuitant lives, the more expensive their retirement benefit becomes.

Note: This chart considers only standard TRA retirees, not disabilitants or survivors.

Source: FY 2022 Actuarial Valuation, Cavanaugh Macdonald
• **2015**: The Duluth/TRA merger added ~700 actives and ~1,500 benefit recipients
• **2021**: The COVID-19 pandemic narrowed the ratio, as teachers left the classroom but did not necessarily retire.

*Source: FY 2022 Actuarial Valuation, Cavanaugh Macdonald*
Minneapolis Public Pension Plans
6/30/2022

Number of Members

<table>
<thead>
<tr>
<th>Plan</th>
<th>Actives</th>
<th>Inactives</th>
<th>Benefit Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRA</td>
<td>84,308</td>
<td>56,715</td>
<td>69,891</td>
</tr>
<tr>
<td>SPTRFA</td>
<td>3,528</td>
<td>5,429</td>
<td>4,253</td>
</tr>
<tr>
<td>MSRS General</td>
<td>51,219</td>
<td>28,490</td>
<td>48,846</td>
</tr>
<tr>
<td>PERA General</td>
<td>149,987</td>
<td>153,311</td>
<td>115,980</td>
</tr>
</tbody>
</table>

Sources: FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; MSRS, PERA, and SPTRFA, Gabriel Roeder Smith).
Financial Health - Statistics
Employee Contribution Rate Comparison

<table>
<thead>
<tr>
<th>Contribution Rates as a % of Payroll</th>
<th>TRA Rates as of 7/1/2023</th>
<th>MSRS General</th>
<th>PERA General</th>
<th>SPTRFA</th>
<th>Nat'l Public Plan Median as of 2019</th>
<th>Nat'l Teacher Plan Median as of 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.75%</td>
<td>7.75%</td>
<td>6.5%</td>
<td>7.75%</td>
<td>6.0%</td>
<td>6.43%</td>
<td></td>
</tr>
</tbody>
</table>

Note: TRA, MSRS General and SPTRFA contributions will increase to 8.0%, 6.0%, and 9.0%, respectively, effective 7/1/2025

- TRA members contribute more to their pension than the average teacher pension member or public plan member does.

Sources: Alex Brown, NASRA; and Public Plans Database
Employer Contribution Rate Comparison

Note: TRA and SPTRFA contributions will increase to 9.5% and 9.75% respectively, effective 7/1/2025

Sources: Alex Brown, NASRA; and Public Plans Database
TRA Statutory Contribution Rates
FY 1960 – FY 2025

- TRA employer contribution rates have historically been greater than employee rates.
- Effective 7/1/2025, employees will contribute 8.0% and employers will pay 9.5%. These are the highest rates in the plan’s history.
• The Annually Required Contribution (ARC) = normal cost + annual cost to amortize the unfunded liability over the funding period.

• Underpaying the ARC leads to a higher unfunded liability. (Unpaid ARC 2014 to 2023 = $884 million, principal only). Interest accrues on the balance.

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
The 10-year average of ARC payments made to TRA was 82.6%.

By comparison, the national average was 90.3%.

A continual underpayment of the ARC puts increased pressure on contribution rates and benefit reductions to close the funding gap.

Sources: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald, and Public Plans Database
TRA Contribution (Deficiency)/Sufficiency History
FY 2014 – FY 2023

• The contribution (deficiency)/sufficiency indicates whether contributions are adequate compared to the total required contribution (normal cost + amortization of the unfunded actuarial accrued liability).

• This chart does not consider future scheduled contribution increases.

Source: Estimated July 1, 2023 Valuation Results, Cavanaugh Macdonald Consulting, LLC
Funded Status – Actuarial Value of Assets

Funded Ratio (AVA)
FY 2014 – FY 2023

- Funded ratio = value of assets / actuarial accrued liability.
- The actuarial value of assets (AVA) uses a smoothing method. This accounts for market volatility by distributing gains and losses over a five-year period.
- TRA’s average funding ratio over the last 10 fiscal years was 77.2%, using the estimated 7/1/2023 results.

Source: Estimated July 1, 2023 Valuation Results, Cavanaugh Macdonald Consulting, LLC
Funded Ratio (AVA)
FY 2013 – FY 2022

Sources: FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; MSRS, PERA, and SPTRFA, Gabriel Roeder Smith).
TRA Funded Ratio vs. National Average
FY 2013 – FY 2022

• TRA's average funded ratio over the ten-year period from FY 2013 to 2022 was 76.8%. Sustainability measures were taken in 2018 to stabilize the fund.
• The national average during that period was 74.6%.

Sources: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald and Public Plans Database
The TRA Fund is projected to reach 100% funded on an actuarial-value-of-assets basis by about 2047, assuming all assumptions are met every year until 2047.

Source: Estimated July 1, 2023 Valuation Results, Cavanaugh Macdonald Consulting, LLC
If the investment return is 0% in FY 2024 and 7.0% each year thereafter, TRA will not reach full funding by 2052. (Estimated 93% in 2052).

If the investment return is -10% in FY 2024 and 7.0% thereafter, TRA would only be 72% funded in 2052.

Source: Estimated July 1, 2023 Valuation Results, Cavanaugh Macdonald Consulting, LLC
• The Actuarial Accrued Liability is the portion of the present value of future benefits that will not be paid for by normal costs. It is a factor in determining the Unfunded Actuarial Accrued Liability (UAAL).

Source: Estimated July 1, 2023 Valuation Results, Cavanaugh Macdonald Consulting, LLC
TRA Assets and Liabilities
FY 2014 – FY 2023

Source: Preliminary FY 2023 TRA Actuarial Valuation, Cavanaugh Macdonald
TRA Investment Return Assumption vs. National Average
FY 2001 – FY 2022

National Average: 6.97%

Source: Public Plans Database
National Average vs. TRA Investment Returns
FY 2013 – FY 2022

Sources: Projected FY 2023 TRA Actuarial Valuation, Cavanaugh Macdonald and Public Plans Database
Financial Health – Plan Maturity
• TRA is a maturing pension plan.
• The ratio between active members and benefit recipients naturally reduces as a plan matures and more individuals began drawing a benefit.

Sources: FY 2022 ACFRs (TRA, MSRS, SPTRFA, PERA) and Public Plans Database
Retiree Liability as a % of Total AAL
FY 2010 – FY 2022

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
Active and Retiree Liabilities in Thousands $

FY 2010 – FY 2022

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
The TRA Fund’s retiree liability is comparable to that of the other Minnesota plans.

Sources: FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; MSRS, PERA, and SPTRFA, Gabriel Roeder Smith).
This ratio shows a negative cash flow, which is normal for a mature pension fund. Investment returns help fill the gap.

Plan design changes (such as increasing or decreasing contribution rates, postretirement increases, etc.) can also affect the ratio.

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
Benefits Paid as a Percentage of Total Assets
FY 2013 – FY 2022

Benefits as a % of assets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8.4%</td>
<td>7.8%</td>
<td>8.1%</td>
<td>8.8%</td>
<td>8.3%</td>
<td>8.1%</td>
<td>8.1%</td>
<td>8.4%</td>
<td>6.8%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

Source: FY 2022 TRA Actuarial Valuation, Cavanaugh Macdonald
# Regional Plan Comparison - Funding

<table>
<thead>
<tr>
<th></th>
<th>Minnesota</th>
<th>North Dakota</th>
<th>South Dakota</th>
<th>Iowa</th>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Funded Status (AVA) as of FY 2022</strong></td>
<td>82.0%</td>
<td>69.9%</td>
<td>100.1%</td>
<td>88.5%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Employee Contribution</strong></td>
<td>7.75% / 8.00% 7/1/2025</td>
<td>11.75%</td>
<td>6%</td>
<td>6.29% (variable)</td>
<td>6.8% (variable)</td>
</tr>
<tr>
<td><strong>Employer Contribution</strong></td>
<td>8.75% / 9.00% 7/1/2025</td>
<td>12.75%</td>
<td>6%</td>
<td>9.44% (variable)</td>
<td>6.8% (variable)</td>
</tr>
</tbody>
</table>
Benefits
Average High-5 Salary at Various Years of Service
FY 2013 – FY 2022

Sources: FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; and MSRS and PERA - Gabriel Roeder Smith).
TRA Average Benefits
Sources: FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; and MSRS and PERA - Gabriel Roeder Smith).

Average Benefit (Annualized) at Years of Service
FY 2013 – FY 2022

PERA General
- <10: $3,030
- 10-30: $13,136
- >30: $39,444

MSRS General
- <10: $5,082
- 10-30: $18,774
- >30: $40,800

TRA
- <10: $4,536
- 10-30: $22,556
- >30: $56,490

Sources: FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; and MSRS and PERA - Gabriel Roeder Smith).
Average Income Replacement at Years of Service

FY 2022

Percentage of Average High-Five Salary Replaced

Years of Service

<10 10-30 >30

TRA MSRS General PERA General

Sources: Calculations derived from FY 2022 actuarial valuations (TRA - Cavanaugh Macdonald; and MSRS and PERA - Gabriel Roeder Smith).
# Regional Teacher Pension Plan Comparison – Benefit Factors

<table>
<thead>
<tr>
<th></th>
<th>Minnesota</th>
<th>North Dakota</th>
<th>South Dakota</th>
<th>Iowa</th>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vesting</strong></td>
<td>3 Years</td>
<td>5 Years</td>
<td>3 Years</td>
<td>7 Years</td>
<td>5 Years</td>
</tr>
<tr>
<td><strong>Benefit Multiplier</strong></td>
<td>Pre-1/7/2006: 1.7%</td>
<td>2%</td>
<td>1.8%</td>
<td>Years 1 - 30: 2%</td>
<td>Pre-2000: 1.765%</td>
</tr>
<tr>
<td></td>
<td>Eff 1/7/2006: 1.9%</td>
<td>2%</td>
<td>1.8%</td>
<td>Years 31 - 35: 1%</td>
<td>Eff 2000: 1.6%</td>
</tr>
<tr>
<td><strong>Average high-five salary</strong></td>
<td>$73,209</td>
<td>$64,916</td>
<td>$43,489</td>
<td>$41,208</td>
<td>$52,475</td>
</tr>
<tr>
<td><strong>Average Benefit Payment</strong></td>
<td>$2,781</td>
<td>$1,722</td>
<td>$1,447</td>
<td>$1,563</td>
<td>$3,318</td>
</tr>
</tbody>
</table>
# Regional Teacher Pension Plan Comparison – Benefit Factors

<table>
<thead>
<tr>
<th>Benefit Factors</th>
<th>Minnesota</th>
<th>North Dakota</th>
<th>South Dakota</th>
<th>Iowa</th>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unreduced Benefit - NRA</td>
<td>Age 66 Eff 7/1/2025: Age 65</td>
<td>Age 65</td>
<td>Age 67</td>
<td>Age 65</td>
<td>Age 65</td>
</tr>
<tr>
<td>Unreduced Benefit</td>
<td>None</td>
<td>Rule of 90 at age 60</td>
<td>None</td>
<td>Rule of 88 or 62/20</td>
<td>Age 57 with 30 Years</td>
</tr>
<tr>
<td>Annual Reduction Factor for Reduced Early Retirement</td>
<td>62/30 Factors:</td>
<td>8%</td>
<td>5%</td>
<td>6%</td>
<td>Age 55-57: 4.8% Age 58-65: 4.8%, reduced by 0.16% for each year of service</td>
</tr>
<tr>
<td></td>
<td>Age 62-66: &lt;4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-62/30 Factors:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age 55-58: 4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age 59-66: 7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postretirement Adjustment</td>
<td>2024: 2.5% 2025: 1.2% 2026: 1.3% 2027: 1.4% Eff. 2028: 1.5%</td>
<td>None</td>
<td>At full funding: equal to CPI-W, range 0% - 3.5% If not fully funded: CPI-W range of 0% - an amount within limits of keeping the plan healthy.</td>
<td>None</td>
<td>Increase or decrease based on investment performance. Benefit can be reduced to the original amount set at retirement, but no lower</td>
</tr>
</tbody>
</table>
Questions?
‘This page intentionally left blank’
TAB 7
DATE: August 16, 2023
TO: TRA Board of Trustees
FROM: Jay Stoffel and Tim Maurer
SUBJECT: Strategic Planning Update

In 2018, TRA underwent an in-depth strategic planning exercise that resulted in the development of a five-year strategic plan for years 2019-2023.

The strategic plan had four main goals:

1. Engagement and education
2. Fund integrity balanced with equity in plan provisions
3. Engaged, empowered, high-performing workforce
4. Risk-intelligent organization

The plan also consisted of seven strategies:

- Evaluate plan provisions to serve future TRA members, employers, and taxpayers
- Improve Stakeholder engagement
- Enhance comprehensive risk-management program
- Create framework for analyzing operational business processes
- Design workforce of the future for benefit plan of the future
- Develop comprehensive, robust training program
- Improve employee engagement

Over the past five years, TRA staff have provided several updates to the TRA board on TRA’s progress in implementing and achieving the goals and strategies outlined in the strategic plan. With the onset of the COVID-19 global pandemic in March of 2020, TRA had to make an immediate shift in priorities to accommodate a full transition to remote work and providing virtual services to members. Despite these hurdles, many aspects of our goals and strategies were ultimately accomplished. However, due to resource limitations and a state mandated hiring freeze that prevented keys roles from being filled, those successes and accomplishments were not able to be as formally documented as we initially intended and anticipated.

We have now reached the point with our current strategic plan where it is time to look forward and start the process of updating the plan and reviewing goals and strategies. One of the first steps in this process will be to fill open positions that are critical to the strategic planning process, such as creating a position where the individual will be responsible for guiding the strategic plan, tracking its process, and documenting successes. This work is already underway and position descriptions are in development with hiring priorities being set.
TAB 8
DATE: August 16, 2023  
TO: TRA Board of Trustees  
FROM: Rachel Barth and Holly Dayton  
SUBJECT: Legislative Goals and Strategy

At the June meeting of the TRA Board of Trustees, the Board indicated an interest in discussing the upcoming 2024 legislative session. Staff recommends that before any detailed discussions or decisions are made, the Board consider the following:

- Is there an ultimate goal or objective for the 2024 legislative session?
- What is the goal trying to achieve or what problem is it trying to solve?
- Will achieving the goal actually solve the problem?
- Is the goal reasonable? Can it be achieved?
- What is the time-frame for achieving the goal?
- Are there available resources to achieve the goal?
- Is this the right time to pursue the goal?
- What outside factors may positively or negatively impact the chance of achieving the goal?
- Do the goal and its proposed solution:
  - Comply with fiduciary duties?
  - Require a shared commitment from all stakeholders?
  - Avoid creating or exacerbating imbalances among generations of members and retirees?
  - Promote the Fund’s long-term financial stability?
  - Maintain the recruitment and retention value of the TRA pension?