

TRA Funding Policy

(adopted by TRA Board of Trustees on 9/16/15)

Preamble

The Board of Trustees of the Minnesota Teachers Retirement Association (TRA) establishes this funding policy in accordance with its fiduciary responsibilities under Minnesota Statutes Chapter 356A. The Government Finance Officers Association (GFOA) recommends that every state and local government offering a defined benefit pension formally adopt a funding policy that provides reasonable assurance that the costs of benefits will be funded in an equitable and sustainable manner.¹

The overriding financial objective of TRA is to assure the long-term financial stability of its defined benefit plan so that it will continue to be an important contributor to the retirement security of Minnesota's public school educators. This funding policy is intended to ensure that the long-term costs of members' benefits will be financed over their lifetimes through the systematic and disciplined accumulation of financial resources.

This funding policy provides guidance to the TRA board and staff in decision making for TRA's defined benefit plan. The policy also provides a valuable communication tool for TRA in working with active member, retiree and employer stakeholder groups and with state government policy makers in the legislative and executive branches.

This funding policy differs in purpose and content from the accounting and financial reporting standards promulgated by the Government Accounting Standards Board (GASB) in Statements 67 and 68. GASB standards in some cases use different actuarial assumptions and methods. Minnesota laws (356.22 and 356.23), however, permit the TRA board to provide additional data and actuarial calculations that are alternatives to GASB standards and conform to the assumptions and methods set out in state statute and this policy.

The purpose of this TRA Funding Policy is to describe:

1. Overall funding goals of TRA.
2. Benchmarks or indicators used to measure progress toward attaining those funding goals.
3. Underlying actuarial methods, procedures used to calculate funding benchmarks.
4. Underlying actuarial assumptions used to calculate funding benchmarks.
5. TRA's post-retirement benefit adjustment mechanism (COLAs)
6. Contribution rate philosophy and rate-setting process of TRA.
7. Reports and tools TRA uses to monitor funding.
8. Consolidation principles.

1. TRA Funding Goals

The overall financial objective of TRA in funding its defined benefit plan is to accumulate sufficient assets during members' employment to fully fund the benefits that will be provided to them in retirement. This includes benefits for current retirees/beneficiaries, benefits already earned by current active members

¹ Government Finance Officers Association (GFOA), Best Practice: Core Elements of a Funding Policy, March 2013.

and future benefits to be earned by current members. In pursuing this financial objective, TRA establishes the following funding goals:

- a. **Pre-fund benefits** in a manner sufficient to maintain adequate asset levels so that investment earnings are the primary source of revenue to pay benefits. Attaining this objective assures that benefits are financed in a cost-efficient manner, lessening the need to rely on employer or employee contributions.
- b. **Achieve inter-generational contribution equity** by maintaining employee and employer contribution rates that are relatively stable over long periods of time and systematically fund the benefit costs during members' working careers and the unfunded actuarial accrued liability (UAAL) over a reasonable time period.
- c. Develop a pattern of **relatively stable and sufficient contribution rates** that allow reasonable income predictability for members and budget predictability for employers.
- d. **Target a 100 percent funded ratio** to be achieved over a reasonable period of time. Rely upon the actuary's periodic actuarial funding projections as well as the annual calculation of the fund's contribution sufficiency/deficiency to determine whether the fund is on track to achieve the 100 percent funded goal. If the fund is projected to fall significantly below attaining its 100 percent funding target, the TRA board will evaluate the cause and magnitude of underfunding and may assess options including benefit changes, contribution rate increases, and increases in other sources of revenue that could put the fund back on track to attain full funding in a reasonable period of time.

2. Funding Benchmarks

To measure progress in achieving TRA's funding goals, the following funding benchmarks will be used:

- a. Funded ratio. TRA will monitor the system's funded ratio, as reported annually by the actuary in the actuarial valuation report. TRA will monitor and evaluate the fund's funded ratio based on both the market and actuarial value of assets.
- b. Deficiency/Sufficiency. TRA will monitor the fund's contribution deficiency/sufficiency which is reported annually in the actuarial valuation and reflects the degree to which TRA is on track to attain full funding by a target date. TRA will monitor and evaluate the fund's deficiency/sufficiency based on both market value and actuarial value of assets.
- c. Actuarial projections. Recognizing the many moving parts of funding the plan, actuarial projections will be completed, as needed to assist the board in evaluating the system's progress toward reaching TRA's funding goals. These projections are required to be produced under the LCPR's Standards of Actuarial Practice every two years but will be produced more frequently when needed.

3. Actuarial Methods and Procedures

The following actuarial methods and procedures will be used in calculating funding benchmarks:

- a. Actuarial cost method. The actuarial cost method used to allocate benefit liabilities is the entry age normal (EAN) cost method, as provided in state statute [356.215 Subd. 1(f)].² This method

² Governmental Accounting Standards Board (GASB) Statements 67 and 68 require the entry age normal cost method to be used to comply with its financial reporting standards. The Government Finance Officers Association

is preferred because it accumulates assets more quickly so that they can be invested earlier to help offset the need for future contributions. This better assures pre-funding of benefits, intergenerational equity and a more stable cost pattern over time.

- b. Asset valuation method. The actuarial value of assets is determined by smoothing asset gains and losses over a five-year period³ as stipulated in state statute [356.215 Subd. 1(b)]. This technique helps smooth out short-term volatility, particularly in required contribution rates.
- c. Amortization period. The period for amortizing unfunded actuarial accrued liabilities is a closed, fixed period that should be no more than 30 years.⁴ The board will periodically evaluate the appropriate length of the amortization period and take into consideration the competing needs for contribution rate stability and intergenerational equity. Currently TRA's fixed amortization date is July 1, 2037 and is set in statute [356.215 Subd. 11].⁵
- d. Level-percent-of-pay amortization. The method for calculating the additional contribution needed to amortize the unfunded actuarial accrued liabilities amortizes those costs as a level percent of covered payroll, as stipulated in state statute [356.215 Subd. 11]. Using the level-percent-of-pay approach is consistent with the pay-related structure of benefits and consistent with how normal costs are determined.⁶
- e. Costs of post-retirement adjustments. The costs of automatic post-retirement benefit adjustments (COLAs) shall be anticipated and funded on an actuarial basis as part of the actuarial requirements and contribution structure reported in annual valuations. State statute [356.215 Subd. 8 (b) (1) and (2)] defines how future COLA costs shall be actuarially valued and included in liabilities with the objectives of identifying and financing the full cost of expected benefits including COLAs. The statutory methodology requires recognizing liabilities of the higher 2.5 percent COLA at the point in time when the fund is projected to be 90 percent or more funded.

4. Actuarial Assumptions

The actuarial assumptions used in calculating funding benchmarks are described below.⁷ Funding for a defined benefit plan is a very long-term endeavor. Therefore, actuarial assumptions should focus on long-term trends, avoiding short-term, frequent shifts in assumptions. Assumptions should be evaluated and changed if long-term expectations have fundamentally changed or if current assumptions are no longer reasonable. Economic and demographic assumptions should be changed only after completion of an experience study.

(GFOA), the Conference of Consulting Actuaries Public Plans Committee (CCAPPC) and the Society of Actuaries (SOA) Blue Ribbon Panel on Public Pension Plan Funding have also identified this method as a best practice.

³ Five-year smoothing of assets is consistent with best practices identified by GFOA, CCAPPC and SOA.

⁴ GFOA best practices recommendation is for a fixed amortization period (rather than a rolling or open-ended period) not to exceed 25 years. GFOA, CCAPPC and SOA identify a preferred range of 15 to 20 years.

⁵ State statute [356.215 Subd. 11] requires limited "layering" of amortized costs when the unfunded actuarial accrued liability increases due changes in actuarial assumptions, plan provisions, or actuarial methods. Such changes are amortized over a new 30-year period and blended into the prior amortization period to create a single resulting base. In the past, this limited layering method has not resulted in a significant revision of the fixed amortization date.

⁶ Level-percent-of-pay amortization is consistent with recommendations by GFOA, CCAPPC and SOA.

⁷ Certain actuarial assumptions are set in statute by the legislature and may or may not comply with actuarial standards (Actuarial Standards of Practice) which are followed by the fund's actuary.

The process followed by the board to change assumptions is outlined in statute [356.215 Subd. 8 (e) and Subd. 18] and can be summarized as follows: Upon completion of an experience study, the board may recommend changes in assumptions based on recommendations of the actuary and will transmit those recommendations to the LCPR for review. If the LCPR takes no action, the board's recommendations with respect to the revised assumptions, except for the interest rate assumption, become effective one year after transmission of the recommendations to the LCPR.

- a. The **interest rate** or investment return assumption used to discount future liabilities shall reasonably reflect the long-term (30 year to 50 year) investment return expectations of the State Board of Investment (SBI). The actuary evaluates this rate as part of periodic experience studies and, when necessary, makes recommendations for changing it. The interest rate is set in statute [356.215 Subd. 8 (a)(1)]. The board may make recommendations to change this assumption, but legislative action is required in order to effect any change.
- b. **Other economic assumptions** (payroll/salary growth and inflation) are recommended by the actuary based on results from periodic experience studies and reasonable long-term expectations. The board evaluates those recommendations and recommends any necessary changes to the LCPR upon completion of the experience study.
- c. **Demographic assumptions** (mortality, termination, retirement ages, disability, etc.) are recommended by the actuary based on periodic experience studies and long-term expectations. Statute requires the assumptions be set at levels consistent with those determined in the most recent experience study [356.215 Subd. 9]. The board evaluates the actuary's recommendations and transmits recommendations to the LCPR when necessary.

5. Post-retirement Benefit Adjustments Mechanism (COLAs)

Current Minnesota statutes provide benefit recipients with annual post-retirement adjustments (COLAs). The overall purpose of these adjustments is to provide some measure of inflation protection, but the adjustments will vary depending upon TRA's funded ratio.

Under current law [356.415 Subd. 1d], a 2 percent compound COLA is paid annually on January 1 as long as the fund is less than 90 percent funded. If the fund becomes 90 percent or more funded for two consecutive years, then the COLA would increase to 2.5 percent. In the event the COLA increases to 2.5 percent, the COLA could revert back to 2 percent if the funded ratio subsequently dips below 85 percent for two consecutive years or 80 percent in one year. This "self-correcting" COLA mechanism attempts to provide some financial protection to the fund in the event of subsequent adverse events and is consistent with the goals of stable contribution rates, long-term sustainability and inter-generational contribution equity.

6. Contribution Rate Philosophy and Rate-Setting Process

When establishing contribution rates, the overall goal is to develop a pattern of relatively stable and sufficient contribution rates that allow reasonable income predictability for members and budget predictability for employers. If contribution rates need to be increased to compensate for adverse economic or demographic experience, such rate increases should be phased in gradually.

The board will also consider the potential impact contribution rate adjustments may have on future COLAs and the potential impact COLA adjustments will have on contribution rates. The board will be mindful of balancing the needs of contributing members/employers with the needs of benefit recipients.

The actuarial cost of benefits should be financed on a shared basis between employees and employers using the following guiding principles:

- a. Employees and employers should share in making contributions to finance the normal costs of benefits and administrative expenses. (Normal cost is the annual cost of benefits earned each year by active members and does not include costs for paying down unfunded liabilities.)
- b. Both employees and employers, including the state, may be required to share some financial responsibility for funding the plan's amortization payment for unfunded actuarial accrued liabilities. Decisions about financing unfunded actuarial accrued liabilities should balance the need for paying off unfunded actuarial accrued liabilities with concerns for maintaining inter-generational contribution equity.

Under state statute [354.42] the TRA board has discretionary authority to adjust contribution rates if the most recent annual valuation indicates there is a:

- deficiency equal to or greater than 0.5 percent of payroll
- sufficiency equal to or greater than 1 percent of payroll. Any decrease in contribution rates must not lower rates below what are sufficient to maintain a one percent sufficiency reserve which is designed to provide a reasonable margin for subsequent adverse experience. In addition, rates must not be lowered below rates necessary to fund normal costs plus administrative expenses. Before rates are lowered, the board will evaluate the system's funded ratio status and the need to change assumptions based on experience studies. The goal is to achieve relatively stable contribution rates and avoid frequent year-to-year changes in rates.

In evaluating whether a contribution rate adjustment is to be made, the board will consult with the TRA actuary and consider factors that include, but are not limited to:

- the funded ratio measured on an actuarial value as well as market value basis
- the number of years remaining to the amortization target date
- recent experience of investment markets
- results of 30-year funding projections
- the potential impact on future COLAs

Annual valuations are due by December 31 of each year. After evaluating the results of the valuation, the board must report any needed contribution adjustment to the LCPR chair and LCPR executive director by the following February 1. If the LCPR does not modify or recommend against the board-approved rate change, then the rate change is effective the following July 1.

7. Funding Analysis Reports

The main reports and tools which the TRA board and staff use to monitor funded status and ascertain whether funding goals are being achieved are described below. These reports are also used to help decide whether adjustments to plan benefits or revenue are needed. As stated under the funding goals described above, if the fund is projected to fall significantly below attaining its 100 percent funding

target, the TRA board will evaluate the cause and magnitude of underfunding and may assess options that could put the fund back on track to attain full funding within a reasonable time period.

- a. **Annual actuarial valuations** are prepared in accordance with state statute [356.20, 356.214 and 356.215] and in accordance with the Standards for Actuarial Work established by the Minnesota Legislative Commission on Pensions and Retirement (LCPR). Annual valuations identify funded ratios, contribution deficiencies/sufficiencies, and actuarial gains/losses which are monitored to identify significant deviations from expected experience. Annual valuations are periodically audited and replicated by the LCPR-retained actuary in a rigorous process that helps assure accuracy of financial reporting and reasonableness of actuarial methods and assumptions.
- b. **30-year funding projection reports** are prepared by TRA's actuary at least every two years using varying scenarios of future investment returns as stipulated in the LCPR Standards for Actuarial Work. The TRA board requests more frequent periodic projections or alternate investment return scenarios when needed.
- c. **Experience studies** are typically prepared every four years by TRA's actuary in accordance with statute [356.215] to test the accuracy of underlying actuarial assumptions and verify the reasonableness of actuarial methods, ensuring that plan assumptions reflect the best estimate of future experience.
- d. **Investment return reports** from the SBI are regularly monitored to anticipate the impact of investment gains or losses on funded status.
- e. **Actuarial cost estimates** are prepared by the TRA actuary and reviewed by the board and staff to evaluate the impact of potential changes to benefits, funding or actuarial assumptions. These actuarial cost estimates are prepared in accordance with the LCPR Standards of Actuarial Work.

8. Consolidation Principles

Two retirement funds have consolidated with TRA in recent years. In 2006, the Minneapolis Teachers Retirement Fund Association merged into TRA and in 2015, the Duluth Teachers Retirement Fund Association consolidated with TRA.

Below are principles which the board intends to follow in formulating its legislative positions and recommendations for potential consolidations:

- a. Merger should be contingent upon approval of the TRA board and the board and membership of the merging entity. TRA will not promote the merger of another fund unless the merger is supported or requested by the outside fund.
- b. TRA would accept a proposed consolidation with the condition that sufficient financial assistance is provided to assure that TRA assets are protected, that TRA is not subsidizing the merging fund and that the consolidating fund is merged into TRA at a fully (100 percent) funded level. Specifically, TRA would accept a consolidation only if a revenue stream is provided, through a combination of dedicated state aid and/or consolidating employer contribution revenue sufficient to cover 100 percent of the liabilities of the merging fund. In calculating the required revenue stream, the full funding of the merging fund's liabilities must occur by TRA's statutory target amortization date, using TRA's actuarial assumptions. Consideration can be given to using different actuarial assumptions and methods if warranted by the specific demographic and economic conditions of the merging fund.
- c. The dedicated aid and/or extra employer revenue must continue until TRA attains 100 percent funding and has a sufficiency. Maintaining the dedicated aid/revenue is necessary because adverse experience with investment returns or other factors could cause TRA subsequently to drop below 100 percent and experience a contribution deficiency.

TRA incurs a number of risks with any merger:

- The risk that the financial assistance pledged upon consolidation is subsequently interrupted, not continued, or re-calculated in a manner that makes it insufficient.
- The risk that future investment performance or adverse experience with other actuarial assumptions (mortality, salary/payroll growth, etc.) deviates from expectations and subsequently increases the costs of consolidation.
- The risk that key actuarial assumptions, such as the interest / investment return assumption is subsequently lowered by the Legislature, an action that increases liabilities substantially.

Appendix

History of TRA Contribution Rates and Funded Ratios

State Fiscal Year	Contribution Rates				Funded Ratios (Actuarial)
	Employee		Employer		
	Basic	Coordinated	Basic	Coordinated	
1931-1953	5.0%				
1953-1957	6.0%				
1958-1959	6.0%		4.00%		
1960-1969	6.0%	3.0%	7.00%	4.50%	
1970-1973	7.0%	3.5%	9.00%	5.50%	
1974	8.0%	4.0%	10.50%	6.50%	50.0%
1975	8.0%	4.0%	10.50%	6.50%	51.8%
1976	8.0%	4.0%	10.50%	6.50%	51.5%
1977	8.0%	4.0%	10.50%	6.50%	56.2%
1978	8.0%	4.0%	11.00%	7.00%	54.3%
1979	8.0%	4.0%	11.00%	7.00%	51.2%
1980	8.5%	4.5%	11.55%	7.55%	52.2%
1981	8.5%	4.5%	11.55%	7.55%	54.4%
1982	8.5%	4.5%	11.55%	7.55%	55.0%
7-1-82 / 12-31-82	8.5%	4.5%	11.55%	7.55%	57.1%
1-1-83 / 6-30-83	10.5%	6.5%	7.55%	3.55%	57.1%
1984	8.5%	4.5%	11.55%	7.55%	59.6%
1985	8.5%	4.5%	12.98%	8.98%	62.1%
1986	8.5%	4.5%	12.98%	8.98%	66.3%
1987	8.5%	4.5%	12.98%	8.98%	70.4%
1988	8.5%	4.5%	12.98%	8.98%	71.2%
1989	8.5%	4.5%	12.98%	8.98%	73.1%
1990	8.5%	4.5%	12.98%	8.98%	77.6%
1991	8.5%	4.5%	12.14%	8.14%	77.8%
1992	8.5%	4.5%	12.14%	8.14%	82.5%
1993	8.5%	4.5%	12.14%	8.14%	85.2%
1994	8.5%	4.5%	12.14%	8.14%	83.5%
1995	10.5%	6.5%	12.14%	8.14%	85.9%
1996	10.5%	6.5%	12.14%	8.14%	92.0%
1997	10.5%	6.5%	12.14%	8.14%	101.3%
7-1-97 / 3-31-98	9.0%	5.0%	10.64%	6.64%	101.3%
4-1-98 / 6-30-98	9.0%	5.0%	9.00%	5.00%	101.3%
1998	9.0%	5.0%	9.00%	5.00%	105.7%
1999	9.0%	5.0%	9.00%	5.00%	105.7%
2000	9.0%	5.0%	9.00%	5.00%	105.2%
2001	9.0%	5.0%	9.00%	5.00%	105.8%
2002	9.0%	5.0%	9.00%	5.00%	105.3%
2003	9.0%	5.0%	9.00%	5.00%	103.1%
2004	9.0%	5.0%	9.00%	5.00%	100.0%
2005	9.0%	5.0%	9.00%	5.00%	98.5%
2006	9.0%	5.0%	9.00%	5.00%	92.0%
2007*	9.0%	5.5%	9.00%	5.00%	87.5%
2008*	9.0%	5.5%	9.50%	5.50%	82.0%
2009*	9.0%	5.5%	9.50%	5.50%	77.4%
2010*	9.0%	5.5%	9.50%	5.50%	78.5%
2011*	9.0%	5.5%	9.50%	5.50%	77.3%
2012 *	9.5%	6.0%	10.00%	6.00%	73.0%
2013 *	10.0%	6.5%	10.50%	6.50%	71.6%
2014 *	10.5%	7.0%	11.00%	7.00%	74.1%
2015 *	11.0%	7.5%	11.50%	7.50%	

*Additional employer contribution of 3.64% required for Minneapolis School District.

History of Contribution Adequacy and Covered Payroll

Fiscal Year	Funding Ratio	FY Contribution Sufficiency (Deficiency)	Covered Payroll (000's)	Notes
2014	74.1%	-3.47%	4,056,482	
2013	71.6%	-4.74%	3,917,310	
2012	73.0%	-5.04%	3,871,809	
2011	77.3%	-3.88%	3,838,111	
2010	78.5%	-4.00%	3,787,757	
2009	77.4%	-5.12%	3,761,484	
2008	82.0%	-3.20%	3,628,095	(7)
2007	87.5%	-1.65%	3,532,159	(6)
2006	92.0%	-0.80%	3,430,645	(5)
2005	98.5%	0.95%	3,121,571	
2004	100.0%	1.54%	3,032,483	
2003	103.1%	1.63%	2,952,887	
2002	105.3%	2.43%	2,873,771	
2001	105.8%	2.15%	2,812,000	
2000	105.2%	2.08%	2,704,535	
1999	105.7%	0.14%	2,625,254	
1998	105.7%	0.18%	2,422,957	(4)
1997	101.3%	1.79%	2,359,011	
1996	92.0%	1.88%	2,268,390	
1995	85.9%	0.36%	2,204,693	
1994	83.5%	-0.07%	2,150,300	
1993	85.2%	-0.07%	2,065,881	
1992	82.5%	-0.41%	1,989,624	
1991	77.8%	-0.28%	1,874,365	
1990	77.6%	-0.31%	1,785,459	(3)
1989	73.1%	1.14%	1,723,122	
1988	71.2%	0.40%	1,594,391	
1987	70.4%	0.35%	1,503,546	
1986	66.3%	-0.05%	1,406,797	
1985	62.1%	-0.20%	1,310,748	*
1984	59.6%	-1.25%	1,232,357	(2)
1983	57.1%	-5.98%	1,146,614	
1982	55.0%	-5.40%	1,129,420	
1981	54.4%	-4.88%	1,040,186	
1980	52.2%	-4.62%	971,670	
1979	51.2%	-4.34%	899,989	
1978	54.3%	-3.01%	845,898	
1977	56.2%	-3.40%	802,761	
1976	51.5%	-3.70%	752,041	
1975	51.8%	-4.24%	663,335	
1974	50.0%	-4.69%	598,421	
1973		-3.09%	583,341	(1)
1972		0.30%	549,394	
1971		0.55%	482,603	
1970		0.63%	431,775	
* Prior to 1985, the contribution sufficiency was characterized as "additional support rate" needed to be paid by employers.				
(1) Effect of high-five average formula				
(2) Impact of higher employer additional contributions				
(3) Impact of Rule of 90 benefit and conversion of Variable Annuity Accounts to Formula and extending amortization to 2020				
(4) Impact of 1997 Formula multiplier improvement and reduction in both ER and EE contribution rates				
(5) Impact of 2006 Formula multiplier improvement and merger with MTRFA				
(6) Recognition of existing Post Fund deficit into required contribution rate structure				
(7) Contribution deficiency worsens due to FY08-09 investment performance of -5% and -18.6%				

Glossary of Key Actuarial Terms

Actuarial Accrued Liability: The benefit liability for service credit earned to date by former and present employees in a plan. Calculation of this liability is a major and important part of actuarial valuations affecting how much needs to be contributed to a plan. Actuarial accrued liability includes benefits due to retirees or other persons already receiving benefits, active members, and deferred members. The data elements maintained in a plan's computerized information systems are needed to calculate this liability.

Actuarial Assumption: Either an economic or demographic expectation about a behavior or condition that influences the funding requirements of the pension plan. Assumptions are tested for accuracy generally every four years by the experience study. Examples of key actuarial assumptions include: mortality rates, disability rates, investment earnings, salary growth, payroll growth, retirement rates, Rule of 90 utilization, etc. Assumptions are listed in detail in the Appendix of the annual valuation.

Actuary: An individual professionally trained in the risk, probability, and mathematical aspects of insurance, pensions and related fields. The actuary prepares a valuation estimating the cost of the plan benefits and how much money must be contributed to support the benefits payable by the plan. Minnesota statutes require system actuaries to be fellows in the Society of Actuaries which administers actuarial qualification examinations.

Amortization (of unfunded actuarial accrued liability) contribution: That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability (UAAL), over a pre-determined period of time. Currently, TRA's UAAL is being amortized (paid off) through June 30, 2037.

Annual Valuation: Provides a report on the financial health of the TRA Fund as of July 1; required by statute and performed annually by an actuary. The report contains a series of mathematical determinations estimating the value of benefits payable to present members and benefit recipients; the value of assets on hand; and future inflows of employer and employee contributions. These estimates are based upon the mortality, investment earnings, and related actuarial assumptions of the plan. With a valuation, the actuary determines whether contributions are sufficient to pay unfunded liabilities by a pre-set target date.

Covered Payroll: The dollar value of all the covered pension salaries of all TRA active members. For the July 1, 2014 valuation, the amount is about \$4.05 billion.

Deficiency: Condition of the pension fund in which the combined annual employee and employer contributions for that year are not adequate to pay for the cost of pension benefits earned that year, for the cost of amortizing the unfunded liability by a certain target date (for TRA, 2037), and administrative expenses.

Entry Age Normal (EAN): The actuarial cost method most commonly used by public governmental retirement systems. This method, required under Minnesota statute, projects the benefit costs of each individual from entry age into the plan to assumed exit age from the plan. This benefit liability is allocated on a level basis over the earnings or service of the individual. Relative to other actuarial cost methods, entry age normal tends to produce more stable, predictable contribution rates, making it easier for public systems to budget for costs.

Experience Study: Periodic review of actuarial assumptions which compares actual experience over the past period (typically four years) to what was assumed would happen. The experience study report

recommends modifications to the assumptions used in the annual valuation process. Studies are performed by the actuary. The next experience will cover the period July 1, 2008, through June 30, 2014. The expected completion date is June 2015.

Full Funding Date: Date set by the legislature when contributions plus investment earnings should equal the benefit costs and administrative expenses of the fund. TRA's full funding date is July 1, 2037. When the full funding date is reached, the fund is expected to be 100 percent funded and annual contributions plus investment earnings are expected to meet the ongoing expenses of the fund. The Legislature has periodically extended out TRA's full funding date.

Funded Ratio: The actuarial value of assets expressed as a percentage of the actuarial accrued liability. The ratio measures the relative health of the fund by comparing assets to liabilities. There are several funded ratios that are reported but TRA's key funded ratio is the "accrued liability funded ratio" which uses the entry age normal cost method to develop liabilities.

Gain/Loss: A gain occurs when actual experience of a plan is better than expected under the plan's actuarial assumptions. For example, if investment earnings are actually higher than what was expected in the actuarial assumptions, then the plan experiences an actuarial gain. Similarly, a loss occurs when experience is more adverse than expected. For example, if a plan experiences lower mortality rates than assumed, its costs will be higher than was assumed.

Interest or Investment Return Assumption: Rate chosen to discount the expected costs of the public pension plan into the future. Pension plans frequently use the long-term expected investment return on plan assets for the actuarial liability (discount assumption). In Minnesota, this rate is set in statute and evaluated by experience studies.

For example, a pension dollar payable in 20 years has a current liability of 19.6 cents using a discount assumption of 8.5 percent. However, if a discount assumption of 5.0 percent is chosen, the current liability is 37.7 cents.

Mortality rates: A table of mortality rates usually organized by gender and age indicating the length of time a person of a given age is expected to live. The rate for a given age and gender indicates the probability of a person of that gender dying while that age. A mortality table along with an assumed interest rate is used to calculate the value of annuities and to make adjustments to annuities.

Normal cost: Actuarial term referring to that portion of plan benefits allocated to a valuation year by the actuarial cost method. Another definition is the cost to grant one year of service to an active member for the year under review. This amount does not include any unfunded actuarial accrued liability.

Payroll growth rate: An actuarial assumption about expected future increases in total covered payroll attributable to inflation and merit; used in applying the level percentage of projected payroll amortization method. For fiscal year 2014, the growth rate is 3.75 percent.

Sufficiency: Condition of a pension fund in which the combined annual employee and employer contributions for that year exceed the cost of pension benefits earned that year, amortization of the unfunded liability, and administrative expenses.

Unfunded Actuarial Accrued Liability (UAAL): The amount by which a plan's benefit liabilities exceed its assets.