



TO: Members of the Legislative Commission on Pensions and Retirement
FROM: Lawrence A. Martin, Executive Director
RE: Minnesota Defined Benefit Retirement Plan Experience Study Requirements
DATE: October 26, 2011

Introduction

During the October 19-20, 2011, meeting of the Legislative Commission on Pensions and Retirement, as part of the discussion of the request by the actuarial consulting firm Mercer for a one-year exemption from the decrement timing requirement in the Commission's Standards for Actuarial Work, a question about the extent and frequency of experience studies arose.

Statutory Experience Study Requirement

Minnesota Statutes, Section 356.215, Subdivisions 1, Paragraph (e); 2; 3, Paragraphs (c) and (d); and 16, require that three Minnesota statewide defined benefit retirement plans, the General State Employees Retirement Plan of the Minnesota State Retirement System (MSRS-General), the General Employees Retirement Plan of the Public Employees Retirement Association (PERA-General), and the Teachers Retirement Association (TRA), prepare experience studies quadrennially. The experience study is to provide experience data and an actuarial analysis of the actuarial assumptions on which the actuarial valuations are based.

No Minnesota statewide or major local defined benefit retirement plans other than MSRS-General, PERA-General, or TRA are required to prepare periodic experience studies.

Commission Standards for Actuarial Work

The Standards for Actuarial Work, last reviewed and adopted by the Commission in 2010, specifies the requirements for experience studies:

- The Standards require an examination of both economic experience and demographic experience and provide for a recommendation by the preparing consulting actuary as to revisions in actuarial assumptions based on past experience, or if some other basis for establishing actuarial assumptions is appropriate, the presentation of the additional rationale for a new actuarial assumption.
- The experience report requirement incorporates the applicable actuarial standards of practice.
- The experience study is required to cover all actuarial assumptions used in regular actuarial valuation reports and is required to include sufficient statistics to allow a pension professional to assess the viability of the preparing actuary's conclusions.
- The experience study is required to show both actual and expected occurrences for each actuarial assumption, for each year covered by the experience study, and for all plan years covered combined.
- If a new actuarial assumption is recommended, a comparison of actual experience with the expected experience under the new assumption and the actuarial cost impact of the revised actuarial assumption must be presented.
- For the retirement plans with smaller sized memberships, the Standards require a review of their actuarial assumptions following the quadrennial experience studies of the three major retirement plans in order to identify necessary assumption adjustments.
- The preparation of an experience study for retirement plans other than MSRS-General, PERA-General, and TRA is required to be approved by the Commission before report preparation.

Extent and Frequency of Experience Studies for Minnesota Defined Benefit Retirement Plans

The following sets forth the experience studies received by the Commission for Minnesota defined benefit retirement plans over the period 1979 to present:

a. Statewide General Employee Defined Benefit Retirement Plans.

1. MSRS General State Employees Retirement Plan (MSRS-General).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|---------------------------------|--------------------|------------------|
| Experience Study 1979-1983 | 6/30/1983 | 2/28/1984 | Experience Study 1988-1992 | 6/30/1992 | 5/13/1993 |
| Experience Study 1985-1986 | 6/30/1986 | Unknown | Experience Study 1992-1996 | 6/30/1996 | 6/9/1997 |
| Experience Study 1985-1987 | 6/30/1987 | Unknown | Experience Study 1996-2000 | 12/31/2000 | 5/31/2001 |
| Experience Study 1985-1988 | 6/30/1988 | 7/31/1989 | Experience Study 7/1/00-6/30/04 | 12/29/2005 | 2/13/2006 |
| Experience Study 1985-1989 | 6/30/1989 | Unknown | Experience Study 2004-2008 | 8/31/2009 | 9/2/2009 |

2. PERA General Employees Retirement Plan (PERA-General).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|-------------------------------------|--------------------|------------------|
| Experience Study 1975-1979 | 7/1/1980 | Unknown | Experience Study 1990-1994 | 5/7/1995 | 3/10/1995 |
| Experience Study 1979-1983 | 6/27/1984 | 6/18/1984 | Experience Study 1992-1996 | 5/29/1997 | 6/3/1997 |
| Experience Study 1985-1986 | 7/30/1987 | Unknown | Experience Study 1996-2000 | 5/29/2001 | 5/31/2001 |
| Experience Study 1985-1987 | 7/22/1988 | Unknown | Experience Study 1997-2001 (Mercer) | 7/11/2002 | Unknown |
| Experience Study 1985-1988 | 7/27/1989 | 7/31/1989 | Experience Study 2000-2004 | 6/30/2004 | 11/16/2005 |
| Experience Study 1985-1989 | 5/30/1990 | Unknown | Experience Study 2004-2008 | 8/31/2009 | 9/2/2009 |
| Experience Study 1988-1992 | 5/10/1993 | 5/11/1993 | | | |

3. Teachers Retirement Association (TRA).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|--|--------------------|------------------|
| Experience Study 1971-1975 | 6/30/1975 | Unknown | Experience Study 1988-1992 (WF Corroon) | 6/1/1993 | Unknown |
| Experience Study 1985-1987 | 7/22/1988 | Unknown | Experience Study 1992-1996 | 6/4/1997 | 6/5/1997 |
| Experience Study 1985-1988 | 7/27/1989 | 7/31/1989 | Experience Study 1996-2000 | 5/29/2001 | 5/31/2001 |
| Experience Study 1985-1989 | 7/19/1990 | 7/25/1990 | Experience Study 2000-2004 | 6/30/2004 | 2/10/2006 |
| Experience Study 1988-1992 | 5/14/1993 | 5/17/1993 | Experience Study 2004-2008 | 10/30/2009 | 11/5/2009 |

b. Statewide Public Safety Employee Defined Benefit Retirement Plans.

1. MSRS Correctional State Employees Retirement Plan (MSRS-Correctional).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|
| Experience Study 1988-1992 | 9/3/1993 | 9/7/1993 |
| Experience Study 1998-2003 | 6/1/2004 | 10/19/2004 |

2. State Patrol Retirement Plan.

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|
| Experience Study 1979-1983 | 6/30/1983 | 2/28/1984 |
| Experience Study 1988-1992 | 9/3/1993 | 9/7/1993 |
| Experience Study 1998-2003 | 6/1/2004 | 10/19/2004 |

3. Public Employees Police and Fire Retirement Plan (PERA-P&F).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|
| Experience Study 1997-2001 | 12/10/2002 | 1/31/2003 |
| Experience Study 2004-2009 | 11/10/2010 | 11/12/2010 |

4. Local Government Correctional Service Retirement Plan (PERA-Correctional).

No experience studies filed.

c. Statewide Specialty Defined Benefit Retirement Plans.

1. Legislators Retirement Plan.

No experience studies filed.

2. Elective State Officers Retirement Plan.

No experience studies filed.

3. Judges Retirement Plan.

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|
| Experience Study 1979-1983 | 6/30/1983 | 2/28/1984 |

d. Local General Employee Defined Benefit Retirement Plans.

1. Duluth Teachers Retirement Fund Association (DTRFA).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|-----------------------------|--------------------|------------------|-----------------------------|--------------------|------------------|
| Experience Study, 1985-1986 | 7/30/1987 | Unknown | Experience Study, 1990-1994 | 1/23/1995 | 1/24/1995 |
| Experience Study, 1985-1987 | 7/22/1988 | Unknown | Experience Study, 1994-2000 | 6/5/2001 | 6/6/2001 |
| Experience Study, 1985-1988 | 7/25/1989 | 7/31/1989 | Experience Study | 6/30/2006 | 12/18/2007 |
| Experience Study, 1985-1989 | 6/14/1990 | 6/15/1990 | Experience Study, 2002-2006 | 7/31/2007 | 8/1/2007 |

2. Minneapolis Teachers Retirement Fund Association (MTRFA).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|----------------------------|--------------------|------------------|
| Experience Study 1976-1979 | 7/1/1980 | 7/3/1980 | Experience Study 1985-1988 | 7/20/1989 | 7/31/1989 |
| Experience Study 1980-1983 | 5/14/1984 | 7/31/1984 | Experience Study 1985-1989 | 5/30/1990 | Unknown |
| Experience Study 1985-1986 | 7/30/1987 | 7/31/1989 | Experience Study 1990-1994 | 2/8/1995 | 2/9/1995 |
| Experience Study 1985-1987 | 7/22/1988 | Unknown | Experience Study 1994-2000 | 6/5/2001 | 6/6/2001 |

3. St. Paul Teachers Retirement Fund Association (SPTRFA).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|------------------------------------|--------------------|------------------|
| Experience Study 1985-1986 | 7/30/1987 | Unknown | Experience Study, Alt. Assumptions | 1/24/1996 | 1/29/1996 |
| Experience Study 1985-1987 | 7/22/1988 | Unknown | Experience Study 1994-2000 | 5/24/2001 | 5/29/2001 |
| Experience Study 1985-1988 | 7/25/1989 | 7/31/1989 | Experience Study, 2000-2006 | 6/30/2007 | 10/2/2007 |
| Experience Study 1985-1989 | 6/14/1990 | 6/15/1990 | Experience Study, 7/1/00-6/30/06 | 4/30/2008 | 5/2/2008 |
| Experience Study 1990-1994 | 1/31/1995 | 2/2/1995 | | | |

4. Minneapolis Employees Retirement Fund (MERF).

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|---|--------------------|------------------|--|--------------------|------------------|
| Experience Study 1979-1983: Summary Letter | 12/23/1983 | Unknown | Experience Study 1985-1989 | 5/30/1990 | Unknown |
| Experience Study 1980-1984 | 8/2/1985 | Unknown | Experience Study 1990-1994 | 3/1/1995 | 3/20/1995 |
| Experience Study 1985-1986 | 7/30/1987 | Unknown | Experience Study 1990-1994: Milliman Review | 3/24/1995 | 3/28/1995 |
| Experience Study 1985-1987 | 7/22/1988 | Unknown | Experience Study 2005-2009 | 6/30/2009 | 10/5/2009 |
| Experience Study 1985-1988 | 7/20/1989 | 7/31/1989 | | | |

e. Local Public Safety Employee Defined Benefit Retirement Plans.

1. Bloomington Fire Department Relief Association.

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|
| Experience Study 1975-1977 | 7/21/1980 | 7/28/1980 |

2. Fairmont Police Relief Association.

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|----------------------------|--------------------|------------------|-----------------------|--------------------|------------------|
| Experience Study 1975-1978 | 12/31/1978 | 12/6/1979 | Experience Study 1982 | 12/31/1982 | 6/6/1983 |
| Experience Study 1979-1980 | 12/31/1980 | 5/15/1981 | | | |

3. Minneapolis Firefighters Relief Association.

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|-----------------------------|--------------------|------------------|--------------------------------------|--------------------|------------------|
| Experience Study, 1975-1978 | 3/10/1980 | 3/17/1980 | Joint Mortality Exp. Study 1999-2002 | 11/1/2003 | 1/21/2004 |
| Gain/Loss Analysis 1981 | 5/25/1982 | Unknown | Experience Study 2000 to 2004 | 7/31/2005 | 12/1/2005 |
| Gain/Loss Analysis 1982 | 5/27/1983 | 6/6/1983 | Experience Study | 11/17/2006 | 2/8/2007 |
| Experience Study 1999-2002 | 11/1/2003 | 1/15/2004 | | | |

4. Minneapolis Police Relief Association.

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|--------------------------------------|--------------------|------------------|--------------------------------|--------------------|------------------|
| Gain/Loss Analysis 1979-1983 | 5/9/1983 | 6/1/1983 | Mortality Exp. Study 2002-2006 | 2/1/2007 | 3/2/2007 |
| Joint Mortality Exp. Study 1999-2002 | 11/1/2003 | 1/21/2004 | | | |

5. Virginia Fire Department Relief .

| <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> | <u>Report</u> | <u>Report Date</u> | <u>Date Recd</u> |
|------------------------------|--------------------|------------------|-------------------------|--------------------|------------------|
| Experience Study 1975-1978 | 11/30/1979 | 12/28/1979 | Gain/Loss Analysis 1982 | 5/20/1983 | 5/25/1983 |
| Gain/Loss Analysis 1979-1980 | 6/19/1981 | 6/22/1981 | | | |

Issue of Expanding the Number of Retirement Plans Required to Prepare Experience Studies.

- a. Question of Expansion Need. Because of the importance of actuarial assumptions in preparing actuarial valuation reports, which define the pension contribution obligations of members, employers, and others, some mechanism is needed to ensure that actuarial assumptions are as accurate in predicting future pension plan experience as possible. Minnesota Statutes, Section 356.215, provides two avenues for monitoring the accuracy of actuarial assumptions, which are periodic experience studies and actuarial gain and loss analyses as part of the annual actuarial valuations. However, experience studies are only required for the three largest (by membership) retirement plans in the state, omitting ten other statewide or major local retirement plans and a number of minor local retirement plans, and actuarial gain and loss analyses are only specifically required for three actuarial assumptions (interest rate, post-retirement mortality, and salary increase), omitting a number of significant actuarial assumptions. A response to this actual or perceived need is to require more retirement plans to prepare periodic experience studies, to require actuarial gain and loss analyses for additional actuarial assumptions, or both.
- b. Appropriateness of Increasing the Number of Required Quadrennial Experience Studies. The policy issue is whether or not it is appropriate to increase the number of Minnesota defined benefit retirement plans that are required to have prepared periodic quadrennial experience studies. An experience study is a report prepared by an actuary that compares the actual experience for a given period of time with the expected experience under the applicable actuarial assumptions in order to substantiate the validity of the current set of actuarial assumptions or to form the basis for the revision of actuarial assumptions. While, in 1992, all of the Minnesota defined benefit retirement plans other than the Legislators Retirement Plan, the Elected State Officers Retirement Plan, and the Judges Retirement Plan were the subject of quadrennial experience studies, since then only the three largest retirement plan (MSRS-General, PERA-General, and TRA) have been required to have quadrennial experience studies. The scaling back of the experience study requirement in the mid-1990s was apparently prompted by a desire on the part of retirement plan administrators to reduce the charge-backs by the Commission for the cost of the actuarial reporting prepared by the consulting actuarial firm that the Commission retained. Since the mid-1990s, the actuarial assumptions of many of Minnesota defined benefit public retirement plans have not been systematically reviewed and have only been revised on a piecemeal basis.
- c. Appropriate Defined Benefit Retirement Plans for Inclusion in an Expanded Quadrennial Experience Study . The policy issue is which of the nine Minnesota defined benefit retirement plans beyond the three major retirement plans, MSRS-General, PERA-General, and TRA, are appropriate, if any, for inclusion in an expanded quadrennial experience study requirement. The chief criterion for determining which retirement plans should be required to have periodic experience studies has been membership size, with retirement plans lacking a sufficient number of members to produce statistically significant experience results from which actuarial assumptions can be generalized omitted from the requirement. While deciding that a retirement plan membership should not be “too small,” it is harder to specifically quantify that “not too small” amount. The following compares the 2010 membership size for the retirement plans for inclusion:

| | MSRS-C | State Patrol | PERA-C | PERA-P&F | DTRFA | SPTRFA | Legislators | Const. Officers | Judges |
|--------------------------|--------|-----------------|--------|----------|-------|--------|-------------|--------------------|--------|
| Active Members | 4,268 | 848 | 3,521 | 11,002 | 1,054 | 3,837 | 47 | 0 | 312 |
| Service Retirees | 1,505 | 684 | 308 | 5,354 | 1,171 | 2,721 | 279 | 11 | 170 |
| Disabillitants | 206 | 48 | 116 | 859 | 19 | 23 | 0 | 0 | 27 |
| Survivors | 148 | 192 | 18 | 1,413 | 105 | 300 | 80 | 4 | 94 |
| Deferred Retirees | 993 | 39 | 1,895 | 1,315 | 301 | 1,863 | 88 | 1 | 18 |
| Nonvested Former Members | 585 | 14 | 1,605 | 930 | 721 | 1,419 | 1 | 0 | 0 |
| Total | 7,705 | 1,825 | 7,463 | 20,873 | 3,371 | 10,163 | 495 | 16 | 621 |

- d. Administrative Cost Increase Associated with an Expansion of the Quadrennial Experience Study Requirement. The policy issue is the affordability of the increase in administrative costs that likely would occur if the quadrennial experience study requirement were expanded to the six additional retirement plans. Since the Commission no longer retains the consulting actuarial firm that produces the primary actuarial valuations and experience studies, the Commission staff has no reliable estimate about the cost of the expanded experience study requirement. The retirement plan administrators could provide some sense of increased costs. Whatever the cost is, the increased cost will be incurred only periodically. Also, with \$357.6 million in annual required contributions at stake with respect to the accuracy of the actuarial assumptions underlying the actuarial valuations and actuarial requirements to be determined, gaining substantiation for the actuarial assumptions of all retirement plans with statistically significant memberships periodically could be well worth the additional administrative expense.

- e. Appropriate Timing of Required New Quadrennial Experience Studies. The policy issue is setting the appropriate effective date for the six newly required quadrennial experience studies. For the retirement plans which either have never been the subject of an experience study or have not been the subject of an experience study since the mid-1990s, the first quadrennial experience study could easily be required at the same time with the next experience studies of MSRS-General, PERA-General, and TRA in 2013. For the other retirement plans that have been or are currently the subject of a special experience study, the first required quadrennial experience study could easily be four years after the reporting of the most recent or future special experience study.
- f. Appropriateness of an Expanded Experience Gain or Loss Analysis Requirement in Annual Actuarial Valuations. The policy issue is the appropriateness of requiring additional actuarial gain or loss analyses in the regular actuarial valuation reports. The actuarial gain and loss analysis requirement, currently covering deviations of experience from actuarial assumptions for investment performance, salary increase, and retiree mortality, functions as a check on the accuracy and reliability of actuarial assumptions by requiring the actuary preparing the actuarial valuation to quantify the amount by which the unfunded actuarial accrued liability of the defined benefit retirement plan increased by virtue of that experience item. Those cumulative actuarial gain and loss analyses, with or without quadrennial experience study results, will identify deficiencies in the actuarial assumption set if there are detailed experience gain or loss results. The current actuarial gain or loss analysis items are the result of a reduction in actuarial reporting requirements pursued by the retirement plan administrators in the mid-1990s in an attempt to reduce the Commission charge-backs for the cost of actuarial services by the Commission-retained actuary. The actuarial valuation programs developed by consulting actuarial firms generally produce actuarial gain and loss results. The valuations prepared by Gabriel, Roeder, Smith & Company, a consulting actuarial firm retained by the former Minneapolis Employees Retirement Fund (MERF) and by SPTRFA since Minnesota defined benefit retirement plans have moved away from the single Commission-related actuary or the retirement plans' administrators' jointly retained actuary in recent years have routinely included the additional actuarial gain or loss items of age and service retirement rates, the death-in-service benefit rates, the disability rates, and the withdrawal or turnover rates. If these additional items are routinely required or reported for non-Minnesota actuarial valuations, they could be added with little adverse consequences.
- g. Administrative Cost Increase Associated with an Expansion in the Actuarial Gain or Loss Analysis Items in Annual Actuarial Valuations. The policy issue is the affordability of the potential increase in the administrative costs that likely would occur if the number of actuarial gain or loss analysis items were expanded in the annual actuarial reporting law. Because the valuation software packages of many or most actuarial firms generally produce a full actuarial gain or loss analysis, it is unclear whether or not there necessarily will be any actuarial services contract cost increase if the requirements were expanded. Even if there is an increase in actuarial services costs associated with this change, the added information and increased substantiation of the reliability of current actuarial assumptions or of the need to develop more accurate actuarial assumptions undoubtedly would be worth any additional administrative expense.

Conclusion

If the Commission is interested in pursuing an increase in the number of retirement plans required to prepare periodic experiences studies, an increase in the actuarial assumptions subject to actuarial gain or loss analysis, or both, the Commission staff is available to draft the required proposed legislation.