MERS
Municipal Employees' Retirement System

EXPERIENCE STUDY
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Experience Study

1. How does MERS ensure plans are sustainable?

As part of our fiduciary responsibility, due diligence and fiscal best practices, we perform an Experience Study **every five years** to compare actual experience of the plan with actuarial assumptions. Our primary goal is to ensure each municipality's plan assets are adequate to provide for the benefits that are expected to be paid and that each plan is making reasonable progress to achieve full funding.

We also partner with municipalities, helping them set fiscal goals and discussing options, to find the programs and provisions that best fit the municipality's unique needs. Many MERS customers have taken proactive steps to reduce their unfunded accrued liabilities (UAL). This includes making additional contributions to their plan and/or selecting one of the many options available, such as offering a lower tier of benefits to new hires, bridging benefits, bonding and changing to either a Hybrid or Defined Contribution Plan.

As a multi-employer plan, MERS establishes a separate trust for each participating municipality. Each entity is responsible for the employer contributions needed to provide benefits for its employees and retirees. This gives our members the benefit of pooling for investments and administrative services, while maintaining the integrity and individuality of each plan.

Changing from one type of retirement plan to another may increase or decrease costs, depending on the type of plan change implemented. It is important to remember; however, that the cost of the defined benefit plan is unique to each municipality, as each plan has its own benefit plan design and funding level. In addition, the cost of the plan is the cost of the benefits adopted—not the cost of MERS.

The projection and volatility scenarios within your annual actuarial valuation will provide you estimates on what future anticipated contributions are likely to be. If you believe your plan is unsustainable as it is today, please review the resource page on our website to review options available to you.

2. Why does MERS conduct an Experience Study every 5 years?

An Experience Study needs to look at a period of data that is long enough to capture **trends** in actual experience while not being so long as to require significant changes in assumptions. A 5 year period is common practice among Public Retirement Systems. Using a shorter period would make it difficult to separate a trend from the fluctuations in experience that normally occur from year-to-year.

3. What's the difference between rolling and fixed amortization?

Historically, public pension plans have used a rolling amortization period of 20-30 years to amortize payments toward unfunded accrued liability (UAL), which means each year the UAL will be "refinanced" over the same period of time. This type of amortization policy assists with contribution stability.

Beginning with the December 31, 2005, annual actuarial valuation, the Retirement Board decided to gradually reduce the amortization period for open divisions, from a rolling 30 years down to a rolling 20 year period. Recently, the rolling amortization was eliminated, so the amortization is more like a home mortgage and the existing UAL is fully funded by the end of the fiscal year beginning in 2039. Moving to this type of "fixed period amortization" means that all unfunded liabilities will be fully funded by a specific date in the future.

4. Are other retirement plans moving to this type of amortization schedule?

Yes. Polling of large Public Systems and the Public Plan actuarial community indicates that systems are moving in this direction, including the State Employees and Teacher's plans, as well as other self-administered plans in Michigan.

5. My municipality is going to be around for a long time, so why should I fully fund our plan within a shorter period of time?

Current funding policy best practices from the actuarial community as well as the Governmental Accounting Standards Board (GASB), support shorter, fixed amortization periods that ensure pension costs of current active employees do not shift into future generations. Determining the length of an amortization period within a funding policy requires balancing the goals of adequacy, inter-generational equity and contribution volatility.

6. How were the layered, shorter amortization periods established?

The actuarial community has invested considerable resources in developing recommendations for funding policies for public plans. As a best practice model, there are recommended schedules for various sources of UAL, including gains/losses in UAL from plan experience, changes in benefits which increase liability, early retirement incentives (windows) and closed plans.

7. How will the change in the funding policy change the amortization payments that occur in the future?

Prior to elimination of the 20 year rolling amortization, UAL payments for open divisions (using the newly adopted assumptions) were scheduled to increase 3.75% per year through the 2020 fiscal year, then increase less than 1% per year thereafter. One of the consequences of rolling amortization is that the UAL is never fully paid off (although the UAL becomes less valuable each year since it is projected to increase at less than the rate of inflation), so UAL payments would have increased perpetually. Now, UAL payments are scheduled to increase 3.75% per year (disregarding changes in investment or demographic experience) until the amortization period reaches 1 (valuation year 2037). Thereafter, the contribution will drop down to roughly the normal cost.

8. Why do closed defined benefit plans need to be funded more rapidly?

In most defined benefit plans, when you close that division to new hires and put them in a defined contribution plan it is required that you fund your UAL more rapidly to ensure that there is enough money in the plan to pay for the benefits. Funding the unfunded liabilities over the standard amortization period may deplete a closed division's assets before the death of the last participant. One reason is because assets cannot be shared between the closed defined benefit division and the new defined contribution plan.

With the adoption of the recommendations from the Experience Study, the MERS Retirement Board approved a fixed 10 year period amortization for closed divisions.

Changes in Funding Levels or Contributions

9. Why do funding levels drop or contributions go up in a defined benefit plan?

Each year MERS provides an annual actuarial valuation to help you budget for your municipality's retirement benefits, with information specific to your municipality's retirement plan. The report also provides insight to your plan's liabilities, funding levels, contributions for both the employer and employee, and important GASB Information. The information in the report will provide you contribution rates for your following fiscal year. In a defined benefit plan contributions vary from one annual actuarial valuation to the next as a result of the following:

- Changes in benefit provisions
- Changes in actuarial assumptions and methods
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions

Each annual actuarial valuation will adjust the required employer contributions up or down based on the prior year's actual experience.

The annual valuation reports from 2005 through 2014 used a 10-year smoothing technique to limit contribution volatility that would otherwise occur from the annual ups and downs of the investment markets. As of December 31, 2014, the smoothed (actuarial) value of assets is 106% of market value, primarily due to the continued scheduled recognition of asset losses that occurred in 2008. If the current 6% difference between the smoothed and market value of assets is not made up, the result would be a gradual decline in funded level and increase in contribution rates over the next few years.

10. How much of a rate increase is attributed to smoothing out 2008 still?

The impact of the scheduled 10 year recognition of the 2008 asset loss on the contribution calculated in the December 31, 2014 annual valuation report varies by employer and by division, depending on a number of factors including whether the division is over or underfunded, and whether the division is open, closed or closed-linked. Thus, a general answer is not possible.

11. If an employer's funding level dropped, why would the minimum contribution be less than it was the previous year?

This would be an unusual situation, however since the contribution rate is a percent of payroll it's possible that a higher than expected increase in payroll outweighs the increase in UAL caused by the increase in pay. The result would be a lower percentage rate because the dollar contribution is divided by a larger payroll.

12. My payroll is shrinking and we aren't hiring any new people. How does this factor into our required contributions?

Open divisions (where new employees become members of the division) are invoiced on a percent-of-payroll basis; however, the employer contribution is remitted to MERS in dollars. So a division with a shrinking payroll may see an increasing contribution as a percent-of-payroll, but not necessarily an increasing dollar contribution.

If payroll is shrinking because the number of covered active employees is decreasing, this means fewer employees covered by MERS benefits and so costs would be lower than if the workforce had remained constant. This may be offset; however, if the employer has to pay the remaining covered employees more than assumed (either via overtime or higher pay increases) to cover the workload that would have otherwise been done by the new employees.

13. What factors cause funding to be more volatile in a smaller division?

Small divisions will have more volatile contribution patterns than larger divisions because statistical fluctuations are relatively larger among small populations. The smaller the group the larger the impact of an individual's experience on the population.

Remember that the assumptions do not determine the ultimate cost of the plan; they only determine the allocation of contributions over time. The actual cost of the plan will be determined by what actually happens to the covered population: when they retire, what the monthly benefit actually is, and how long the covered retiree will live to receive the benefit.

14. How is liability affected when an unvested employee leaves but does not refund their contributions?

This participant's liability changes to the contribution balance itself, which may be lower than the previous liability when the participant was active. This is displayed in the Pending Refunds component in Table 6.

15. How is liability affected if a vested employee leaves but it is before their retirement date?

In most situations this would result is a lower total liability. Their liability becomes the present value of a deferred pension benefit, which is usually less than the prior liability as an active employee.

16. How is the liability reflected for a former non-vested employee that accrues additional service time through either MERS to MERS or Act 88 time?

A liability is held for former non-vested participants that are working at another MERS municipality under the assumption that they will continue working and earn enough MERS time to be vested at the prior municipality. These types of employees will show up in the vested former employee count in Table 3 of your annual actuarial valuation. It's possible that the participant will earn enough service to commence their deferred benefit at a younger age than originally anticipated (i.e if the prior municipality has an optional early retirement rider). In this case, there will be a loss on the liability in the valuation.

Managing UAL

17. What options does my municipality have to reduce UAL?

As a multi-employer plan, MERS establishes a separate trust for each participating municipality. Each entity is responsible for the employer contributions needed to provide benefits for its employees and retirees. This gives our members the benefit of pooling for investments and administrative services, while maintaining the integrity and individuality of each plan.
Many MERS customers are already taking steps to reduce unfunded accrued liabilities (UAL). This includes making additional contributions to their plan and/or selecting one of the many options available, such as offering a lower tier of benefits to new hires, bridging benefits, bonding and changing to either a Hybrid or Defined Contribution Plan. Please review our website for additional details.

18. Should we make additional contributions to our plan?

The required contributions of your defined benefit plan are only the minimum required amount. **MERS strongly encourages employers to contribute more than the minimum contribution**, as these additional contributions will earn investment income, and later you will have to contribute less than otherwise.

19. What affect does making additional contributions have on our funding level?

Michigan Law requires that pension plans be pre-funded, meaning money is set aside now to pay for future benefits. Contributions are a combination of the normal cost (the present value of benefits as of the valuation date for the current plan year) and an amortized payment toward any unfunded accrued liability (UAL). UAL is the amount of benefits that have been accrued but not yet funded (the difference between liabilities and assets).

You may contribute more than the minimum required contributions, as these additional contributions will earn investment income, and later you will have to contribute less than otherwise. **MERS strongly encourages employers to contribute more than the minimum contribution.** However, how quickly a plan attains the 100% funding goal depends on many factors such as:

- The current funded ratio
- The future experience of the plan
- The amortization period

Additional contributions work to decrease the UAL and improve the funded status of your plan. If the UAL increases due to other factors (such as adverse experience, benefit improvements or assumption changes) this may offset some or all of the effect of the additional contributions.

20. How long will it be before our required contribution equals the normal cost of the plan?

Table 1 of your annual actuarial valuation provides information regarding the breakdown of your employer contributions including; the normal cost and any unfunded accrued liability for each division, along with the amortization period associated with each division. Effective with this year's valuation, we have moved to a fixed amortization period. This means that all obligations of a retirement plan will be fully funded by a specific target date in the future. Having a fixed amortization period gives a specific target date to each plan by which all known obligations will be fully funded.

As of December 31, 2014 the smoothed asset value used in the actuarial valuation was 106% of market value. If this difference is not covered by future investment returns in excess of the 7.75% assumed annual return, most contribution requirements will increase somewhat. Future near-term investment market experience cannot be predicted with any precision, and could have a positive or negative impact on funded ratios and employer contribution requirements.

21. Should my municipality bond for our UAL?

Whether or not to issue Pension Obligation Bonds (POB) is a complex topic and we recommend you obtain qualified expert consulting advice before reaching a decision. Issuing a POB does not change the underlying liability for the MERS benefits promised by the employer. It is important to remember that, even if a POB is issued for an amount equal to the UAL, it is not a guarantee against the future emergence of UAL (whether from adverse experience, plan improvements or assumption changes).

Ultimately we consider the issuance of a POB to be an investment decision.

If you plan to explore bonding as an option, MERS will work closely with you and your consultant (if applicable) to provide the necessary information to assist you with your decision. To ensure an efficient experience for you, we continue to work closely with the Michigan Department of Treasury and others to ensure the information we are providing meets the needs of all stakeholders.

Closed Defined Benefit Plans

22. What are the advantages/disadvantages of blended rate?

A blended employer contribution rate is calculated when there is a closed division linked to an open division (these divisions are known as a linked set). Normally the employer would be invoiced a flat dollar amount for the closed-linked division and a (separate) percent-of-payroll contribution for the open division. A blended employer rate simply expresses the contributions for each of the divisions in the linked set as a percent-of-payroll over the combined linked set.

Employers wishing to use the blended contribution rate should contact MERS to set up this alternate invoicing arrangement.

The advantages of a blended rate is that it allows an employer to be invoiced a single percent-of payroll amount for the entire linked set. This may be useful in situations where the employer closes a division to new hires and provides a different benefit structure for new employees (a new, open division) within the same job classification. The blended rate could then be applied to all employees with the same job classification (who would be members of one or the other divisions of the linked set).

One disadvantage of using the blended employer contribution is that the same percent of payroll contribution would be allocated to both the open and closed-linked divisions. In the case where the open division provides lower benefits than the closed division more contributions may flow to the open divisions than are necessary and less to the closed divisions, skewing the funding of the divisions in the linked set. Should this be the case, we suggest the employer periodically reallocate assets between the divisions in the linked set.

23. Can there be an employer cap on a blended rate?

Yes, because the entire linked set of divisions is considered an open group.

24. How are flat bill amounts determined?

The better question is “how are percentage bills determined?” Each division starts off with a calculated flat bill – the normal cost plus the UAL payment. Closed divisions are billed this amount. The percentage bill for open divisions is calculated by dividing the flat bill by the payroll expected in the upcoming fiscal year.

MERS Investments

25. Why didn’t MERS lower the investment rate of return assumption sooner?

We perform an Experience Study every five years to review the MERS funding policy and compare actual experience with the current actuarial assumptions. Historically, MERS has met the 8% investment assumption over the long-term; however, since the financial crisis of 2008 the feeling in the public plan investment community is that an 8% return assumption may be too high. We feel it is still too soon to conclude that recent economic conditions have *permanently* changed future long-term financial markets; however, the Board determined that it would be prudent to reduce the long-term investment assumption to 7.75% per year. This increases the likelihood of meeting or exceeding the assumption.

26. How is MERS investment performance doing compared to others?

MERS consistently outperforms its benchmarks and market averages, with a prudent, long-term approach designed to provide downside protection and upside market participation.

The MERS Retirement Board and Office of Investments actively select and monitor the investment managers. MERS actively evaluates and, as needed, changes investment managers on a continual basis, ensuring strict criteria are met for expense ratios and investment performance. The Office of Investments establishes and implements the investment performance objectives and research, perform due diligence and monitors the different managers and funds. This is done with a focus on driving successful outcomes.

27. I see other investments returning much higher rates than MERS, why is that?

Investing in today's financial markets is becoming increasingly complex as a result of the rapid exchange of information, increased volatility and global interconnectedness. Thus, it is important to identify core beliefs in order to simplify the investment decision making process. Following is a list of our unwavering investment beliefs:

- Capital preservation is paramount—avoiding losses is more important than achieving gains
- Markets are shockingly inefficient — they are driven by human emotion which can often be exploited by taking a contrarian, long-term perspective
- Keep it simple — if you do not understand it, do not invest in it
- Volatility is not a true measure of risk, permanent impairment of capital or shortfall is risk
- Diversification is critical because the future is unknown
- Mean reversion drives everything — it is helpful to remind ourselves that most investments go through cycles, and cycles imply reversion
- The focus should be on risk-adjusted returns — returns cannot be evaluated without considering the risk taken to achieve those returns

We believe that constantly reminding ourselves of and framing our discussions around these central tenets will help achieve the stated investment goals and increase the probability of **long-term** investing success.

28. What types of investments does MERS invest in and how are these managed?

The MERS portfolio investment options are professionally managed by MERS. Each portfolio has a target asset allocation that is rebalanced on a quarterly basis. MERS Office of Investments uses a number of external institutional investment managers that make up these portfolios. For more information on our investments, please see our website.

Other Actuarial Assumptions

29. How does the Withdrawal Rate Scaling Factor work, and what factors are considered?

The Experience Study showed a significant variation among employers in the rates of withdrawal. Equally important, the actuaries believed that the amount of withdrawal data for larger employers is of sufficient size to be statistically significant. Because of this withdrawal, scaling factors were developed for large employers. The scaling factor is applied to the standard MERS withdrawal table, which is based on years of service. For example, a new hire has a 20% probability of terminating employment in the first year of employment based on the overall experience of the MERS system. If the withdraw scaling factor is 80%, the probability is changed to 16% (0.80 * 0.20).

30. What numbers are used in the FAC Load Factor, and what happens when that changes?

Previous Experience Studies found that the Final Average Compensation (FAC) of new retirees was often higher than expected, compared to the reported annual pays from the years prior to retirement (the most recent Experience Study confirms this as well). Employees retiring with higher than expected FAC have higher than expected liabilities, leading to actuarial losses at retirement. By loading for the anticipated increase in FAC this allows the employer to fund for the anticipated higher liability during the working lifetime of the employee, rather than paying for the liability loss after the employee retires.

For each new retiree in the 5 year study period, the actuaries compared the actual FAC at retirement against the projected FAC based on previous year-end valuation data. The recent Experience Study showed that, on average, the actual FACs were 3% higher than expected. FAC increases varied significantly among municipalities so FAC loads were developed separately for each affected municipality. A higher FAC load results in larger active employee liability. However, remember that assumptions, including the FAC load, do not determine the ultimate cost of the benefit – the ultimate cost depends on the actual FAC used. In other words, if an employee's FAC was understated during their employment the liability loss generated at retirement would need to be paid during the employee's retirement years – and vice-versa.

Note that the FAC load factors reflect things like lump sum payments at retirement or extra overtime in the final year of employment. However, the load factors do not reflect any overtime increases that occur during the entire 3-5 year FAC period.

31. What is the calculation that is used to get to the monthly UAL contribution amount?

The annual valuation report calculates a UAL amount as of the December 31 valuation date, and calculates a contribution amount (including a UAL amortization payment) for a fiscal year beginning between 12 and 23 months after the valuation date. Because of the "lag" between the valuation date and the beginning of the fiscal year, we need to account for amortization

payments that are scheduled to be made during the lag period. The UAL is first projected to the start of the upcoming fiscal year for which the contribution is calculated. The projected UAL increases with interest and decreases due to expected UAL amortization payments, similar to a loan balance. That is why the projected UAL as of the beginning of the fiscal year won't exactly match the UAL as of the December 31st valuation date. The projected UAL is then amortized over the applicable period of years. The payments include interest and principal like a home mortgage, except that the total annual payment is scheduled to increase 3.75% per year.

32. What happens to the Actuarial Accrued Liability (AAL), assets and percent funded when an employee moves from active employment to becoming retired?

The active employee liability, plus the loss (or gain) on AAL due to the retirement, moves to the retiree row in Table 6 of the annual actuarial valuation. Employer assets may be moved from the active to the retired row as well, as employer assets are first allocated to the retirees and beneficiaries row, then the vested former employees, then the active employees for purposes of Table 6. The different funded percentages in Table 6 are for illustration purposes to show how well funded the long term debt (actives and deferreds) is after funding the short term debt (retirees).

33. Is there a simple way to see the normal cost of a plan for those that have an employer cap?

No. The total normal cost varies depending on the employee contribution rate (if any). Because an employee may leave employment and withdraw their accumulated contribution account balance, the employee contribution rate must be higher than the equivalent employer contribution rate, for the same liability. Another way to think about this situation is that a dollar contributed by the employer can only be used to pay a future benefit, while a dollar contributed by the employee may be refunded to that employee (and so may not be available to pay a future retirement benefit). In addition, the assumed probability of retirement is dependent on the size of the employee contribution (the higher the employee contribution, the more likely the employee will retire sooner).