IPERS

2005 to 2009
EXPERIENCE STUDY

Prepared:
JUNE 2010

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June 11, 2010

Investment Board
Iowa Public Employees' Retirement System
7401 Register Drive
Des Moines, IA 50321

Dear Members of the Board:

It is a pleasure to submit this report of our investigation of the experience of the Iowa Public Employees' Retirement System for the period of July 1, 2005 through June 30, 2009.

The set of assumptions recommended as a result of this study will be used in the June 30, 2010 actuarial valuation of IPERS which will be used to analyze the funding status of the system, calculate the actuarial and statutory employer contribution rates, and disclose employer liabilities for financial statements.

The purpose of this report is to communicate the results of our review of the actuarial methods and assumptions to be used in the completion of the upcoming valuation. Our recommendations represent changes from the prior methods or assumptions, which are intended to better anticipate the emerging experience of the System. Actual future experience, however, may differ from these assumptions.

In preparing this report, we relied without audit on information supplied by IPERS staff. In our examination, we have found the data to be reasonably consistent and comparable with data used for other purposes. It should be noted that if any data or other information is inaccurate or incomplete, our calculations might need to be revised. We would like to acknowledge the help given by IPERS staff in the preparation of this report.

We hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

We further certify that the assumptions developed in this report satisfy ASB Standards of Practice, in particular, No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* and No. 35, *Selection of Demographic and Other Non-economic Assumptions for Measuring Pension Obligations.*

Milliman has been engaged by IPERS as an independent actuary. Any distribution of this report must be in its entirety, including this cover letter, unless prior written consent is obtained from Milliman.

Milliman's work product was prepared exclusively for the use or benefit of IPERS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning IPERS' operations, and uses IPERS data, which Milliman has not audited. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

We look forward to our discussions and the opportunity to respond to your questions and comments at your next meeting.

I, Patrice A. Beckham, am a member of the American Academy of Actuaries, an Enrolled Actuary and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I, Brent A. Banister, am a member of the American Academy of Actuaries, an Enrolled Actuary and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

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Section 1

Executive Summary

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs of a retirement system. Actuarial valuations of the Iowa Public Employees' Retirement System (IPERS) are prepared annually to determine the actuarial contribution rate to fund the System on an actuarial basis, i.e. the current assets plus future contributions along with investment earnings will be sufficient to provide the benefits promised by the System to current members. The valuation requires the use of certain assumptions with respect to the occurrence of future events, such as rates of death, termination of employment, retirement age and salary changes to estimate the obligations of the System.

The basic purpose of an experience study is to determine whether the actuarial assumptions currently in use are accurately predicting actual emerging experience. This information, along with the professional judgment of System personnel and advisors, is used to evaluate the appropriateness of continued use of the current actuarial assumptions. When analyzing experience and assumptions, it is important to realize that actual experience is reported short term while assumptions are intended to be long term estimates of experience.

IPERS conducts an experience study every four years. The current study covers the period July 1, 2005 through June 30, 2009. This report presents the results and recommendations of our study, which if approved, will be implemented with the June 30, 2010 actuarial valuation of the System. In performing this study, we have reviewed the recommendations made by Gabriel, Roeder and Smith (GRS) in their 2006 audit report regarding the experience study and implemented them as we deemed appropriate.

There are three different membership groups in IPERS with different applicable plan provisions and contribution rates:

1. Regular members
2. Special Services Group 1 (SS1) and
3. Special Services Group 2 (SS2).

The benefit provisions for the Special Services groups are very similar and the size of the groups is relatively small. Therefore, for purposes of analyzing experience, the data for the Special Services groups has been aggregated when reasonable to do so. Results are shown separately for Regular members which includes State, School and Other public employers, and Special Services members (SS1 and SS2) in the discussion of demographic assumptions.

During this study period, the membership of SS2 increased as a result of transfers for certain employees of the Department of Corrections, county jailers, and some other small groups. To the extent possible, we attempted to reflect how these new groups will ultimately affect the demographic assumptions of SS2. However, changes may unfold over the next few years and experience should be closely monitored.

Several changes in benefits provisions for regular members were passed in the 2010 legislative session. These will be effective July 1, 2012. We have not attempted to anticipate how these plan changes (particularly changes regarding early retirement benefits) may impact member behavior in the future. Such changes, if any, will be reflected in future experience studies as the changes unfold.

ACTUARIAL METHODS

In addition to a review of the actuarial assumptions used in the actuarial valuation, the actuarial methods are also evaluated. We are not recommending any change to the actuarial methods. There are three key actuarial methods that are required to complete the annual actuarial valuation. The current methods are shown below:

Actuarial Cost Method:	Entry Age Normal
Asset Valuation Method:	75% Expected Value/25% Actual Value with an 80%–120% corridor around market value
Amortization Method:	Level Percent of Payroll

ACTUARIAL ASSUMPTIONS

The actuarial valuation process utilizes two different types of assumptions: economic and demographic. Economic assumptions are related to the general economy and its impact on IPERS. Demographic assumptions are based on the emergence of the specific experience of IPERS members.

Economic Assumptions

We are not recommending any change to the economic assumptions, as shown below:

Assumption	Current	Recommended
Inflation	3.25%	3.25%
Interest Credited on Contribution Balances	4.00%	4.00%
Investment Return	7.50%	7.50%
Wage Growth	4.00%	4.00%

It is worth noting that while the investment return assumption remains well within the reasonable range (as described *in Actuarial Standards of Practice No. 27*) it falls close to the 50th percentile. This indicates about a 50% chance that the rate of return over the long term will meet or exceed 7.50%. Previous experience studies indicated a higher probability of meeting or exceeding the 7.50% benchmark.

Demographic Assumptions

The study period in this experience investigation (July 1, 2005 through June 30, 2009) includes the current recession and the worst stock market performance since the Great Depression. We believe this has created a situation where individuals have adjusted their choices regarding employment and thus some of the experience of the period may not be representative of future long-term experience. This is particularly true of the assumptions where the individual members have significant control over their situation, such as retirement and termination of employment. We analyzed experience for each of the four years individually as well as in aggregate. If any of the experience in certain years seemed out of line, the credibility of that experience was reduced in evaluating the current assumptions and proposing changes.

As noted earlier and discussed in more detail below, we have developed separate assumptions for subgroups of the regular membership. Other changes to the demographic assumptions were also made to better reflect trends we have been observing:

- Retiree mortality continues to improve as anticipated by our use of generational mortality tables, but some adjustments were made to better fit the observed experience.
- Retirement rates were modified to reflect the observed patterns of retirement, generally reflecting fewer retirements.
- Disability rates were generally lowered.
- Termination of employment rates were lowered, reflecting increased employee retention.
- The probabilities of terminating members leaving their contributions with IPERS and receiving a deferred retirement benefit were generally increased to reflect experience.
- Salary increase assumptions were modified to better reflect the observed experience by group. There were both increases and decreases in the rates at various durations.

In the last Experience Study, we introduced a new methodology for analyzing the experience, called a "liability weighted" approach (referred to in this report as "weighted"). A member's "liability" in the System is generally determined by the benefit amount and age of the member. Most assumptions already reflect differences by age directly. The other factor, benefit amount, is impacted by salary and service. We use these two factors to estimate the member's relative benefit level and then weight the experience (the exposure and actual occurrences are scaled by salary and service). This approach is particularly insightful when analyzing experience from a non-homogenous group. While we reviewed experience on both a count and liability weighted basis for most decrements, we generally gave the liability weighted experience more credibility in recommending changes.

The current and prior experience studies have included analysis of experience by subgroup for the regular membership (State, School, Other). In general, our analysis has indicated differences in behavior by members employed by different types of public employers. As actuaries, part of our responsibility is to estimate the value of future benefit payments. The assumptions used in the valuation are a critical component in the process of calculating the present value of future benefits. The better the assumptions anticipate actual experience, the better the liability estimate will be. Since the evidence shows variation in the behavior of members in the State, School and Other groupings, we believe the actuarial assumptions should reflect this difference. Therefore, in most cases we are recommending separate assumptions for State, School and Other employees to allow us to better estimate the liabilities and costs of the System as a whole. Consequently, there are recommended changes to nearly all demographic assumptions. This level of change is unusual and would likely not occur absent the change in approach.

In this study we have included greater detail on the supporting calculations, including the exposure and actual crude rates. Please see the Data Summary pages in Appendices C through H for this additional detail.

OPTIONAL FORM FACTORS

A retiring member has a choice of how the benefit will be paid; e.g. single life annuity, joint and 50% survivor annuity, life with 10 years guaranteed, etc. These different types of payments are called optional forms. Optional form factors are used to convert one form of benefit payment to another on an actuarial equivalent basis (i.e. no gain or loss to the System). These factors were recently updated and adopted in 2006. We have not recommended any significant changes in the interest or mortality assumptions in this study. Therefore, we are not recommending a change to the optional form factors at this time. Their continued use should be reviewed based on any recommended changes in future experience studies.

SPECIAL TOPICS

There were two special topics that IPERS asked to be analyzed and included as part of the experience study report: (1) the impact on costs of the retired/re-employed group, and (2) retirement patterns of licensed health care professionals.

As we discuss more fully in Section 12, the retired re-employed members have a higher normal cost rate than the overall membership. However, because of the relatively low payroll of this group, the total impact is less significant. We recognize that from an equity standpoint, policymakers may wish to consider provisions that would counter the cost-shifting from the retired re-employed members to the active members.

Legislation in 2006 provided that licensed health care professionals could return to employment one month after retiring (rather than four months) and still be considered *bona fide* retirees. Since this group was not separately identified and their experience monitored before the legislation was enacted, we cannot assess whether or not behavior patterns changed in response to the legislation. We do note, however, that when compared to the Other IPERS employees, this group exhibits higher retirement rates, more likelihood of returning to employment following retirement, and higher wages once they return to employment. These factors translate to increased costs, but cannot be quantified with the available data.

SUMMARY

The estimated financial impact of the recommended changes, as based on June 30, 2009 valuation results, is summarized below. Assumption changes only impact the liabilities and the normal cost rate. Assets are unaffected. The impact on the June 30, 2010 valuation should be similar, as a percent of the liability, but the dollar amount of impact will vary with the change in the underlying liability amount.

Change in Actuarial Liability

	Regular	Special Services 1	Special Services 2
Actuarial Liability ($M)	$24,733	$412	$873
Inc/(Dec) Due to Assumption Change:			
Mortality	15	13	25
Retirement	(31)	(2)	3
Termination	12	2	(3)
Probability of Electing a Vested Benefit	7	0	0
Disability	1	(1)	(11)
Salary Scale	(102)	(1)	(4)
Net Change	**(98)**	**11**	**10**
Estimated Actuarial Liability ($M)	$24,635	$423	$883
% of the 6/30/09 Actuarial Liability	(0.4%)	2.7%	1.1%

Change in Normal Cost Rate

	Regular	Special Services 1	Special Services 2
Normal Cost	9.97%	15.57%	15.92%
Inc/(Dec) Due to Assumption Change:			
Mortality	(0.01%)	0.25%	0.13%
Retirement	(0.02%)	(0.16%)	0.08%
Termination	0.61%	0.66%	0.35%
Probability of Electing a Vested Benefit	(0.02%)	0.00%	0.00%
Disability	0.01%	(0.22%)	(0.76%)
Salary Scale	(0.01%)	(0.11%)	0.14%
Net Change	**0.56%**	**0.64%**	**(0.06%)**
Estimated Normal Cost	10.53%	16.21%	15.86%
% of the 6/30/09 Normal Cost Rate	5.6%	4.1%	(0.4%)

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Section 2

Introduction

Funding and Valuation Principles

Just as certain investment choices have an associated "investment risk," choices in actuarial assumptions have an associated "actuarial risk". Our responsibility is to consider the impact our work will have on members, employers, and taxpayers, both current and future.

The determination of the actuarial contribution rate is dependent on the assumptions used to project the future benefit payments and then discount them to obtain the present values. Thus, it is important that the Board understand the sensitivity of the actuarial calculations to the underlying assumptions.

- If actual experience shows that the assumptions overestimated the true cost of the plan, current taxpayers and public employers may be required to bear a burden that rightfully belongs to future taxpayers.
- If actual experience shows that the assumptions underestimated the true costs, future taxpayers may be required to bear a burden that rightfully belongs to the current taxpayers.

The actuarial assumptions do not impact the true cost of the plan benefits; they do impact how the financing and pre-funding of those retirement benefits takes place before the true costs can be determined.

The question that needs to be asked in the public sector is: How great an actuarial risk is the Board willing to accept in the actuarial assumptions? If actuarial experience gains materialize, IPERS's funded status will be better than expected. If actuarial experience losses materialize, IPERS funded status will decline and the actuarial contribution rate will increase. IPERS Funding Policy provides for the contribution rate to pay the normal cost rate and amortize the UAL over no more than 30 years for the regular membership. Actuarial contribution rates are calculated for the Special Services groups using a 30 year amortization of the UAL/(Surplus). However, this is not specifically in the Funding Policy. Due to recent legislative changes that moved IPERS contribution rates from a fixed statutory contribution rate to a contribution rate tied to the actuarial rate, we recommend that the Funding Policy be reviewed and revised accordingly.

The actuarial assumptions are divided into two groups: economic and demographic. The economic assumptions must not only reflect IPERS's actual experience but also give even greater consideration to the long-term expectation of future economic growth for the nation, as well as the global economy. By long term, we are looking at time periods of 30 to 50 years - a much longer time frame than is usually addressed by investment managers or economists.

The non-economic, or demographic assumptions, are based on IPERS's actual experience, adjusted to reflect trends and historical experience. Thus, the economic assumptions tend to be more subjective than the demographic assumptions. The demographic assumptions are much more dependent on the results of the experience studies, but there is still some subjectivity involved in evaluating the experience and recommending any changes. There is no "right" answer because the future is unknown. Differences of opinion among actuaries will occur based on each person's experience and outlook.

Overview

This report presents the results of an investigation of the recent actuarial experience of IPERS. We will refer to this investigation as an experience study. Throughout this report, we refer to "current" and "proposed" actuarial assumptions. The current assumptions are those that were used for the actuarial valuation of IPERS as of June 30, 2009. These assumptions and methods were adopted by the Board based on IPERS' 2005 Experience Study. The proposed assumptions are those we recommend for use in the valuation as of June 30, 2010 and for subsequent valuations until further changes are made.

The choice of economic assumptions (inflation, investment return and wage growth) is discussed in Section 4 of this report. These assumptions are generally chosen on the basis of the actuary's expectations as to the effect of future economic conditions on the operation of IPERS. However, the setting of these assumptions is generally considered more subjective than the demographic assumptions.

Sections 5 through 11 of this report will show the results of our study of demographic assumptions and will be discussed with the Board at the June 24, 2010 Investment Board meeting. These assumptions are much more objective than the economic assumptions. The exhibits are detailed comparisons between actual and expected events (death, retirement, termination, etc.) on both the current and proposed bases. These graphs are included in the Appendices for your reference.

For each type of assumption, graphs show the actual, the expected and proposed rates, usually based on a combination of gender, years of service and age group. The exhibits also show the total numbers of actual and expected decrements based on the current assumption and the proposed, if any. Ratios larger than 100% on the current basis indicate that the rates may need to be raised; ratios smaller than 100% indicate that rates may need to be lowered. Note that for graphs where no change is being proposed, the current and proposed rates are the same and only one line is visible.

IPERS' members are differentiated by class, i.e. the employment status of a member. There are three different membership groups (classes) in IPERS:

1. Regular members;
2. Special Services Group 1 (SS1) and;
3. Special Services Group 2 (SS2).

The benefit provisions for both Special Services groups are very similar, in general, and the size of the groups is relatively small. Therefore, for purposes of analyzing experience, the data for the Special Services groups has been aggregated for most assumptions.

As in the last experience study, we observed differences in experience by the groups covered in the regular membership (State, School, Other). As a result, we are generally recommending different assumptions for each group. We believe this will result in a better estimate of the System's liabilities.

Our Philosophy

Similar to an actuarial valuation, the numerical calculation of actual and expected experience is a fairly mechanical process. From one actuary to another, you would expect to see very little difference. However, the setting of assumptions is a different story, as it is more art than science. In this report, we recommend revised assumptions. To better understand our thought process, here is a brief summary of our philosophy:

- **Don't overreact:** When we see significant changes in experience, we generally do not adjust our rates to reflect the entire difference. We will generally recommend rates somewhere between the old rates and the new experience depending on the level of credibility assigned to the more recent data. If the experience during the next study shows the same result, we will probably recognize this trend at that point. On the other hand, if the experience returns closer to its prior level, we will not have overreacted, minimizing volatility in the member and employer contribution rates.
- **Anticipate Trends:** If there is an identified trend that is expected to continue, we believe that this should be recognized. An example of this is the retiree mortality assumption. It is an established trend that people are continuing to live longer; therefore, we prefer to build in a margin to reflect future decreases in mortality rates to recognize the longer expected payment period.
- **Simplify:** In this report we describe what factor affects each assumption. In general, we attempt to identify which factors are significant and eliminate the ones that do not significantly improve accuracy.

Actuarial Standard of Practice No. 27: Selection of Economic Assumptions

The Actuarial Standards Board has adopted Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations.* This standard provides guidance to actuaries giving advice on selecting economic assumptions for measuring obligations under defined benefit plans, such as IPERS. ASOP No. 27 is applicable to any valuation with a measurement date on or after July 15, 1997.

Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

Recognizing that there is not one "right answer", the standard calls for the actuary to develop a best estimate range for each economic assumption, and then recommend a specific point within that range. Each economic assumption should individually satisfy this standard.

After completing the selection process, the actuary should review the set of economic assumptions for consistency. This may require the actuary to use the same inflation component in each of the economic assumptions selected. However, if a change occurs in one assumption, the actuary needs to consider if the change would modify other economic assumptions as well.

An actuary's best-estimate range with respect to a particular measurement of pension obligations may change from time to time due to changing conditions or emerging plan experiences. The actuary may change assumptions frequently in certain situations, even if the best-estimate range has not changed materially, and less frequently in other situations. Even if assumptions are not changed, the actuary needs to be satisfied that each of the economic assumptions selected for a particular measurement complies with Actuarial Standard of Practice No. 27.

In our opinion, the proposed economic assumptions have been developed in accordance with ASOP No. 27.

Actuarial Standard of Practice No. 35: Selection of Demographic Assumptions

Actuarial Standard of Practice No. 35 (ASOP 35) governs the selection of demographic and other non-economic assumptions for measuring pension obligations. This standard applies to any measurement date occurring after September 15, 2001. *ASOP 35* states that the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

ASOP No. 35 Steps

The actuary should follow the following steps in selecting the demographic assumptions:

1. Identify the Types of Assumptions. Types of demographic assumptions include but are not limited to retirement, mortality, termination of employment, disability, election of optional forms of payment, administrative expenses, family composition, and treatment of missing or incomplete data. The actuary should consider the purpose and nature of the measurement, the materiality of each assumption, and the characteristics of the covered group in determining which types of assumptions should be incorporated into the actuarial model.
2. Consider the Relevant Assumption Universe. The relevant assumption universe includes experience studies or published tables based on the experience of other representative populations, the experience of the plan sponsor, the effects of plan design, and general trends.
3. Consider the Assumption Format. The assumption format includes whether assumptions are based on parameters such as gender, age, service or calendar year. The actuary should consider the impact the format may have on the results, the availability of relevant information, the potential to model anticipated plan experience, and the size of the covered population.
4. Select the Specific Assumptions. In selecting an assumption the actuary should consider the potential impact of future plan design changes as well as the factors listed above.
5. Evaluate the Reasonableness of the Selected Assumption. The assumption should be expected to appropriately model the contingency being measured. The assumption should not be anticipated to produce significant actuarial gains or losses.

ASOP No. 35 General Considerations and Application

Each individual demographic assumption should satisfy the criteria of *ASOP 35*. In selecting demographic assumptions the actuary should also consider the internal consistency between the assumptions, materiality, cost effectiveness, and the combined effect of all assumptions. At each measurement date the actuary should consider whether the selected assumptions continue to be reasonable, but the actuary is not required to do a complete assumption study at each measurement date. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with *ASOP 35*.

Section 3

Actuarial Methods

ACTUARIAL COST METHOD

The financing of a pension plan requires that contributions be made in an orderly fashion while a member is actively employed, so that the accumulation of these contributions, together with investment earnings should be sufficient to provide promised benefits and cover administration expenses. The actuarial valuation is the process used to determine when money should be contributed; i.e., as part of the budgeting process.

The actuarial valuation will not impact the amount of benefits paid, or the actual cost of those benefits. In the long run, actuaries cannot change the costs of the pension plan, regardless of the cost method used or the assumptions selected. However, actuaries will influence the incidence of costs by their choice of methods and assumptions.

The valuation or determination of the present value of all future benefits to be paid by the System reflects the assumptions that best seem to describe anticipated future experience. The choice of a cost method does not impact the determination of the present value of future benefits. The cost method determines only the incidence or allocation of cost. In other words, the purpose of the cost method is to allocate the present value of future benefits determination into annual costs. In order to do this allocation, it is necessary for the cost method to "break down" the present value of future benefits into two components: (1) that which is attributable to the past (2) and that which is attributable to the future. The excess of that portion attributable to the past over the plan assets is then amortized over a period of years. Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial liability". The portion of the present value of future benefits allocated to the future is commonly known as "the present value of future normal costs", with the specific piece of it allocated to the current year being called "the normal cost". The difference between the plan assets and actuarial liability is called the "unfunded actuarial liability".

Two key points should be noted. First, there is no single "correct" cost method. Second, the allocation of the present value of future benefits and hence cost to the past for amortization and to the future for annual normal cost payments is not necessarily in a one-to-one relationship with service credits earned in the past and future service credits to be earned.

There are various actuarial cost methods, each of which has different characteristics, advantages and disadvantages. A brief summary of the most commonly used cost methods is included below.

- Entry-Age-Normal Cost Method

  The rationale of the entry age normal (EAN) cost method is that the cost of each member's benefit is determined to be a level percentage of his salary from date of hire to the end of his IPERS' covered employment. This level percentage multiplied by the member's annual salary is referred to as the normal cost and is that portion of the total cost of the employee's benefit which is allocated to the current year. The portion of the present value of future benefits allocated to the future is determined by multiplying

this percentage times the present value of the member's assumed earnings for all future years including the current year. The entry age normal actuarial liability is then developed by subtracting from the present value of future benefits that portion of costs allocated to the future (present value of future normal costs). To determine the unfunded actuarial liability, the value of plan assets is subtracted from the entry age normal actuarial liability. The current year's cost to amortize the unfunded actuarial liability is developed by applying an amortization factor.

It is to be expected that future events will not occur exactly as predicted by the actuarial assumptions in each year. Actuarial gains/losses from experience under this actuarial cost method can be directly calculated and are reflected as a decrease/increase in the unfunded actuarial liability. Consequently, the gain/loss results in a decrease/increase in the amortization payment, and therefore the contribution rate.

- Projected Unit Credit

The projected unit credit cost method defines the actuarial liability to be the value of the employee's accrued benefit based upon his service as of the valuation date and his estimated final average earnings at the time he retires or otherwise exits. The normal cost is the present value of benefits accruing during the year with projected salary increases. The unfunded actuarial liability is determined by subtracting the actuarial value of assets from the actuarial liability. The current year's cost to amortize the unfunded actuarial liability is developed by applying an amortization factor.

As with the entry age normal cost method, the actuarial gains and losses that accrue each year modify the unfunded actuarial liability and the payment thereon.

- Aggregate

This cost method does not develop individual normal costs, but calculates a normal cost rate for the entire plan. The total value of future normal costs is found by subtracting the actuarial value of assets from the present value of future benefits. This amount is then spread as a level percentage of future payroll for the entire group. Gains/losses are included in the present value of future benefits and thereby incorporated into the normal cost percentage for future years. The basic premise of the aggregate cost method is to develop a normal cost which, from the valuation date forward, will fund the whole unfunded portion of the plan's future benefits as a level percentage of payroll over the active members' working lifetime.

This method does not differentiate between past service costs and current costs. Therefore, no actuarial liability exists under the aggregate cost method and actuarial gains and losses are not directly calculated as in the other cost methods.

- Frozen Entry Age

The frozen entry age cost method is a blend of the entry age normal and aggregate cost methods. The unfunded actuarial liability is initially determined using the entry age normal cost method. Each year the unfunded actuarial liability (UAL) is set equal to the expected unfunded actuarial liability. Actuarial gains and losses are not reflected in the amount of the unfunded actuarial liability, but rather are reflected in the normal cost. The frozen actuarial liability is changed only to reflect plan amendments

and changes in the actuarial assumptions. The amortization payments for the current and all future years are fixed at the time the unfunded actuarial liability is determined. The normal cost is developed similarly to that under the aggregate cost method. The present value of all future benefits is determined and then reduced by the valuation assets and the unfunded frozen actuarial liability. The resulting amount is then spread as a level percentage of future payroll.

IPERS has used the Entry Age Normal actuarial cost method since 1996. This method tends to develop a normal cost rate which is stable and less volatile even if there are changes in the demographics of the active population. It is used by about 75% of all public sector plans. Following the actuarial audit performed in 2006, a technical change was made to better align the allocation of the costs to anticipated contributions (sometimes distinguished as "continuous" versus "discrete"). **We recommend that IPERS continue using the entry age normal cost method.**

ASSET VALUATION METHOD

In preparing an actuarial valuation, the actuary must assign a value to the assets of the fund. An adjusted market value is often used to smooth out the volatility in the market value. This is because most plan sponsors would rather have annual costs remain relatively level, as a percentage of payroll or in actual dollars, rather than a cost pattern that is extremely volatile.

The actuary does not have complete freedom in assigning this value. GASB has certain requirements related to the calculations prepared under GASB Number 25. The American Academy of Actuaries (AAA) also has basic principles regarding the calculation of a smoothed value. A relatively new actuarial standard regarding the use of an asset smoothing method was published September 2008, *Actuarial Standard of Practice No. 44 (ASOP 44), Selection and Use of Asset Valuation Methods for Pension Valuations.*

ASOP 44 provides that the asset valuation method should bear a reasonable relationship to the market value. Furthermore, asset valuation method should be likely to satisfy both of the following:

- Produce values within a reasonable range around market value AND
- Recognize differences from market value in a reasonable amount of time.

In lieu of both of the above, the standard will be met if either of the following requirements is satisfied:

- There is a sufficiently narrow range around the market value OR
- The method recognizes differences from market value in a sufficiently short period.

These rules or principles prevent the asset valuation methodology from being used to distort annual funding patterns. No matter what asset valuation method is used, it is important to note that, like a cost method or actuarial assumptions, the asset valuation method does not affect the true cost of the plan; it only impacts the incidence of cost.

IPERS values assets, for actuarial valuation purposes, based on the principle that the difference between actual and expected investment returns should be subject to partial recognition to smooth out fluctuations in the total return achieved by the fund from year to year. This philosophy is consistent with the long-term nature of a retirement system. Under this method, the actuarial value of the assets is the expected value of assets plus 25% of the difference between market value and expected value, where the expected value is last year's actuarial value and subsequent cash flows into and out of the fund accumulated with interest at the

valuation rate (7.5%). This is mathematically equivalent to using a weighted average of 75% of the expected value and 25% of actual market value.

IPERS' current asset valuation method also includes what is known as a "corridor", which provides that once the initial determination of the actuarial value of assets is made it is compared to a corridor around market value (80% of market value to 120% of market value). If the initial actuarial value lies outside the corridor, the final actuarial value of assets is set equal to the corresponding corridor value. For example, if the initial actuarial value of assets is 132% of market value, the actuarial value is set equal to 120% of market value. We believe the corridor is necessary to ensure actuarial standards are met.

An asset valuation method is used to "smooth out" the market volatility that occurs in the market value of assets. IPERS has historically used a smoothing method. We believe the current method, with the corridor adopted in 2007, is reasonable and meets actuarial standards. **We recommend the current asset valuation method, including the corridor, be retained.**

AMORTIZATION METHOD

As described earlier, actuarial liabilities are the portion of the present value of future benefits that are not included in future normal costs. Thus it represents the liability that, in theory, should have been funded through past normal costs. Unfunded actuarial liabilities (UAL) exist when actuarial liabilities exceed plan assets. These deficiencies can result from (i) plan improvements that have not been completely paid for, (ii) experience not being as favorable as expected, (iii) assumption changes or (iv) contributions less than the actuarial rate.

An amortization method is an approach for recognition of the UAAL in the contribution rates. There are a variety of different methods that can be used to amortize the UAL. Each results in a different payment stream and therefore the amortization approach utilized will have an impact on the incidence of costs. For each methodology, there are three characteristics:

- The period over which the UAL is amortized,
- The rate at which the amortization amount increases, and
- The number of components of UAL with separate amortization bases.

Statement No. 25 of the Governmental Accounting Standards Board (GASB) sets parameters for all of these characteristics. Currently, the maximum amortization period permitted is 30 years and the annual amortization amount can be either a level dollar amount or a level percentage of payroll. The UAL may be amortized as one amount or components may be amortized separately. The Governmental Accounting Standards Board is currently in the process of reviewing these standards so changes may occur in the future.

All non-public pension plans, pursuant to the Internal Revenue Code, must use level dollar amortization to pay off their unfunded actuarial liability for purposes of IRS minimum funding. This is similar to the method in which a home owner pays off a mortgage. The liability, once calculated, is financed by a constant fixed dollar amount, based on a predetermined number of years, until the liability is extinguished. This results in the liability steadily decreasing while the payments, though remaining level in dollar terms, in all probability decrease as a percentage of payroll. (Even if a plan sponsor's population is not growing or even slightly diminishing, inflationary increases will usually be sufficient to increase the aggregate payroll).

The rationale behind the level percentage of payroll amortization method is that since normal costs are calculated to be a constant percentage of pay and contributions are usually payroll related, unfunded actuarial liabilities should be paid off as a percent of payroll. When this method of amortizing the unfunded actuarial liability is adopted, the initial amortization payments are lower than they would be under a level dollar amortization payment method but the payments increase at a fixed rate (4% per year for IPERS) so that ultimately the annual payment far exceeds the level dollar payment. It is expected that total payroll is increasing as rapidly so the amortization payments will remain constant as a percentage of payroll. In the initial years, the level percentage of payroll amortization payment is often less than the interest accruing on the unfunded actuarial liability, meaning that even if there are no experience losses, the unfunded actuarial liability will grow. If the plan sponsor is paying off the unfunded liability over a long period, such as 30 years, it is possible that the unfunded liability will grow for nearly 20 years, gradually reduce so that in the 25th year the unfunded liability is equal to the initial unfunded liability, and still be completely paid off by the 30th year. Use of the level percentage of payroll amortization has its advantages and disadvantages. From a budgetary standpoint, it makes sense to develop UAL contribution rates that are level as a percentage of payroll. However, this approach clearly results in slower funding of the UAL.

The amortization period can be either fixed or open. If it is a fixed or closed amortization period, it declines each year. Alternatively if the amortization period is an open or rolling period, the amortization period does not decline but is reset each year. If the System is to move toward a 100% funded ratio, the amortization period must be closed or at least decline for a number of years. However, amortization over a closed period typically presents a problem when the remaining period is short because it results in volatility in the contribution rate and the period is often reset to a longer period.

Lastly, the UAL can be amortized as one amount or as components or "layers" with separate amortization bases. If the UAL is amortized as one amount over a closed period, the period typically is reset when the number of years remaining in the amortization period becomes short (10 or 15 years) to avoid volatility in the contribution rate. There are two options: (1) use an open period or (2) use a closed period with separate amortization bases. Use of separate amortization bases, with closed periods, results in moving the System toward 100% funding if assumptions are met. It also provides transparency in that the current UAL is paid off over a fixed period of time and the remaining balance is clearly identified. One downside of this approach is that it can create some discontinuities in contribution rates when UAL layers/components are fully paid off. This may not occur, and if it does, it would be far in the future, with adequate time to make adjustments.

Given the current funded status, it is unlikely the statutory contribution rate will reach the actuarial contribution rate for many years. Consequently, the use of a single or multiple amortization bases is a moot point at this time. We recommend staying with a single amortization base and revisiting the methodology once the statutory contribution rate is expected to converge with the actuarial contribution rate within five years. We believe the decision on the amortization base and period should be part of the Funding Policy review.

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Section 4

Economic Assumptions

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* provides guidance to actuaries giving advice on the selection of economic assumptions for measuring obligations under defined benefit plans, such as IPERS. Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

Recognizing that there is not one "right answer", the standard calls for the actuary to develop a best estimate range for each economic assumption, and then recommend a specific point within that range. Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with all other economic assumptions over the measurement period.

This section of the report will address the relevant types of economic assumptions used in the actuarial valuation to determine the obligations of IPERS. In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27. The following table summarizes the current and proposed economic assumptions:

	Current Assumption	Proposed Assumption
A. Inflation	3.25%	3.25%
B. Interest on Contribution Balances	4.00%	4.00%
C. Investment Return	7.50%	7.50%
D. Wage Growth	4.00%	4.00%

INFLATION

Use in the Valuation: Inflation as referred to in this report means price inflation. The inflation assumption has an indirect impact on the results of the actuarial valuation through the development of the assumptions for investment return, general wage growth, and payroll increase assumption.

Inflation also has a direct impact on the valuation results. The Iowa Code provides for a potential increase in the annual dividend for members who retired before July 1990. The maximum annual increase in the dividend is the lesser of 3.0% or the increase in the CPI-U, subject to certain certifications by the actuary. Therefore, the inflation assumption is used directly to develop the assumed increase in the annual dividend payments for this group of retirees. The law also provides that the interest rate credited on member contribution balances will be 1% above the rate credited on a one year Certificate of Deposit (CD). Because the interest rate on a one year CD is dependent on inflation, the inflation assumption also impacts the assumed rate of interest on contribution balances.

The long-term relationship between inflation and investment return has long been recognized by economists. The basic principle is that the investor demands a more or less level "real return" – the excess of actual investment return over inflation. If inflation rates are expected to be high, investment return rates are also expected to be high, while low inflation rates will result in lower expected investment returns, at least in the long run.

The effect of inflation is more direct on wages than on investment return. An individual's wages are affected by:

(1) Promotion and longevity (merit scale)
(2) Productivity/Reclassification
(3) Inflation

For actuarial purposes, productivity and inflation are often combined into a single assumption for salaries: the rate of increase in the general wage level of the membership or the wage growth assumption. Our actuarial assumption for salary increases is composed of a merit scale assumption, which reflects the effects of promotion and longevity and the general wage growth assumption.

The current assumption for inflation is 3.25% per year.

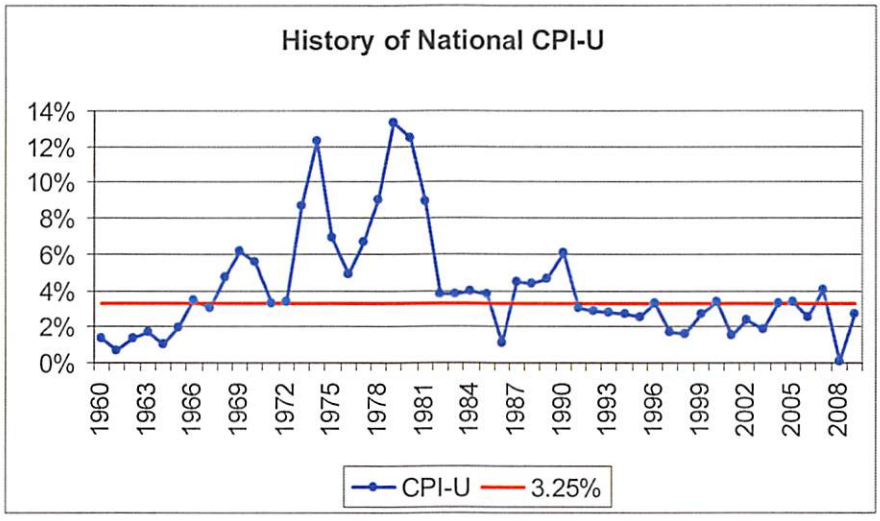
Historical Perspective: For our analysis, we have used certain published economic statistics that have been accumulated on a monthly basis over the last 75 years. The data for inflation is based on the national Consumer Price Index, US City Average, All Urban Consumers (CPI-U) as published by the Bureau of Labor Statistics. The data for periods ending in December of each year is documented in Exhibit 1 at the end of this section.

Although economic activities in general, and inflation in particular, do not lend themselves to prediction on the basis of historical analysis, historical patterns and long term trends are a factor to be considered in developing the inflation assumption.

There are numerous ways to review historical data, with significantly differing results. The tables below show the compounded annual inflation rate for various ten-year periods, and for longer periods ended in December of 2009.

Decade	CPI
1999-2009	2.52%
1989-1999	2.93%
1979-1989	5.10%
1969-1979	7.36%
1959-1969	2.52%

Periods Through 2009	CPI
1999-2009	2.52%
1989-2009	2.73%
1979-2009	3.51%
1969-2009	4.46%
1959-2009	4.07%
75 years	3.78%



Forecasts of Inflation: Since the U.S. Treasury started issuing inflation indexed bonds, it is possible to determine the approximate rate of inflation anticipated by the financial markets by comparing the yields on inflation indexed bonds with traditional fixed government bonds. As of the beginning of 2010, market prices suggested investors expected inflation to be about 2.75% over the next ten years.

Although most economists forecast inflation lower than the current assumption of 3.25%, they are generally looking at a shorter period than is appropriate for a pension valuation. To consider a longer time frame, we looked at the expected inflation assumption developed by the Office of the Chief Actuary for the Social Security Administration. In the May 2009 report, the annual increase in the CPI over the next 30 years was 2.80% under the intermediate cost assumptions. The lower cost assumption used 1.80% and the high cost assumption used 3.80%, creating a reasonable range of 1.80% to 3.80%. These are unchanged from the 2006 report, which was part of the development of the inflation assumption in the last IPERS Experience Study.

Reasonable Range and Recommendation: We believe that a range between 2.50% and 4.00% is reasonable for an actuarial valuation of a retirement system. We recommend that the long-term assumed inflation rate remain 3.25% per year.

Consumer Price Inflation	
Current Assumption	3.25%
Reasonable Range	2.50% - 4.00%
Recommended Assumption	3.25%

RATE OF CREDITING INTEREST ON CONTRIBUTION BALANCES

Use in the Valuation: The law provides that the interest rate credited on contribution balances will be 1% above the rate credited on a one year Certificate of Deposit (CD). Because this rate impacts the dollar amount available for refund and the number of guaranteed payments at retirement under Option 2, an assumption must be used to project future contribution balances.

The current assumption is 4.00%. The interest rate credited on Certificates of Deposit is directly impacted by inflation. Rates on short-term CDs tend to be somewhat lower than the long term inflation rate.

Reasonable Range and Recommendation: Based on the reasonable range developed for the inflation assumption, we believe a reasonable range for the interest rate credited on contribution balances is 3.25% to 4.75%. **We recommend the assumption remain at 4.00% to be consistent with the inflation assumption.**

Interest on Contribution Balances	
Current Assumption	4.00%
Reasonable Range	3.25% - 4.75%
Recommended Assumption	4.00%

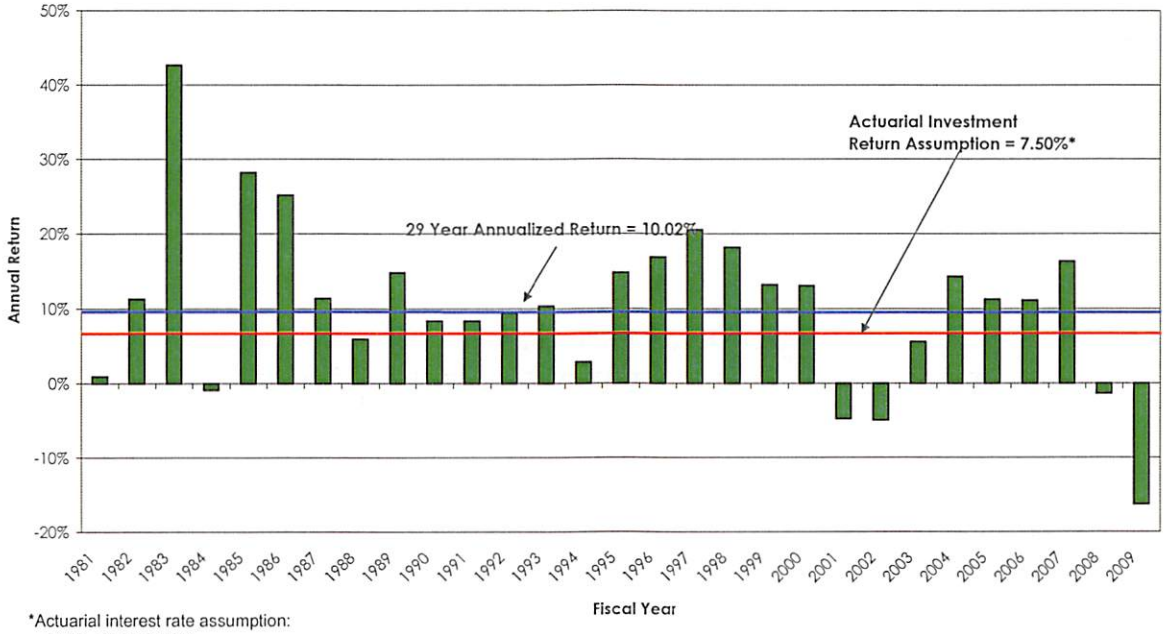
INVESTMENT RETURN

Use in the Valuation: The investment return assumption (or valuation interest rate) is one of the primary determinants in the calculation of the expected cost of the System's benefits, providing a discount of the estimated future benefit payments to reflect the time value of money. This assumption has a direct impact on the calculations of liabilities and contribution rates. The valuation interest rate should represent the long-term rate of return on the actuarial value of assets, considering the fund's asset allocation policy, expected long term real rates of return on the specific asset classes, the underlying inflation rate, and investment and administrative expenses.

The current assumption for investment return is 7.50% per year, net of all investment-related and administrative expenses.

Historical Perspective: One of the inherent problems with analyzing historical data is that the results can look significantly different depending on the time frame used if the year-to-year results vary widely. Even though history provides a valuable perspective for setting this assumption, the economy of the past is not necessarily the economy of the future, nor is recent experience necessarily a good predictor for future long term experience.

The actual rates of return for past years for IPERS are shown on the following chart. While the annualized returns for the last 10 years were far below the 7.50% assumed rate of return, the 20-year return was 7.96% and the 29-year return was 10.02%.



*Actuarial interest rate assumption:
1953 - 1994: 6.50%
1994 - 1996: 6.75%
1996 - present: 7.50%

ANNUALIZED RETURNS through 6/30/09			
1-Year Return:	-16.27%	10-Year Return:	3.91%
3-Year Return:	-1.33%	15-Year Return:	8.00%
5-Year Return:	3.50%	20-Year Return:	7.96%

Best-Estimate Range for Investment Return

Milliman's investment consulting practice has developed a method to determine the best-estimate range for the investment return based upon assumptions for capital markets and the target asset allocation. The current target asset allocation for IPERS is summarized in the following chart:

Asset Class	Target Asset Allocation
Domestic Equities	28%
Non-US Equities	15%
Real Estate	8%
Private Equity	10%
Core Plus Fixed Income	30%
Real Assets	3%
Cash	1%
High Yield Bonds	5%
Total Portfolio	100%

This method is used to provide the range of assumptions appropriate for compliance with Actuarial Standard of Practice No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations.* This standard defines the Best-Estimate Range as "the narrowest range within which the actuary reasonably anticipates that the actual results, compounded over the measurement period, are more likely than not to fall."

By assuming the portfolio is re-balanced annually and that annual returns are lognormally distributed and independent from year to year, we can develop expected percentiles for the long-term distribution of annualized returns.

Using properties of the lognormal distribution, we calculate the 25th and 75th percentiles of the long-term total return distribution. This becomes our best-estimate range because 50% of the outcomes are expected to fall within this range and it is centered about the mean. The expected rate of return using the capital market assumptions developed by Milliman's investment consulting practice is shown below.

Expected Return – Milliman Assumptions

	Percentile Results		
Components of Return	**25th**	**50th**	**75th**
Real Investment Return	3.43%	4.47%	5.53%
Assumed Inflation	3.25%	3.25%	3.25%
Investment Return	6.68%	7.72%	8.78%

We also performed this analysis using IPERS investment consultant's (Wilshire) capital market assumptions and adjusting for the difference in their inflation assumption (2.50%) and our long-term inflation assumption for the valuation (3.25%). The results, which are very close to Milliman's, are shown below:

Expected Return – Wilshire Assumptions

	Percentile Results		
Components of Return	**25th**	**50th**	**75th**
Real Investment Return	3.52%	4.47%	5.44%
Assumed Inflation	3.25%	3.25%	3.25%
Investment Return	6.77%	7.72%	8.69%

Investment-Related and Administrative Expenses

The investment return used for the valuation is assumed to be net of all investment-related and administrative expenses. The table below shows the ratio of investment and administrative expenses to assets over the last ten fiscal years. The expense ratio is calculated as the total expenses divided by the beginning of year asset balance.

Fiscal Year	Investment Expenses	Administrative Expenses	Actuarial Value Assets ($M)	Expense Ratio		
				Investment	Administrative	Total
2008-09	$39.3	$9.9	$21,857	0.17%	0.05%	0.22%
2007-08	58.3	9.1	20,760	0.28	0.04	0.32
2006-07	46.1	9.3	19,144	0.24	0.05	0.29
2005-06	48.8	8.3	17,951	0.27	0.05	0.32
2004-05	31.2	8.0	16,951	0.18	0.05	0.23
2003-04	29.9	8.0	16,120	0.19	0.05	0.24
2002-03	37.6	7.6	15,613	0.24	0.05	0.29
2001-02	42.6	7.3	15,112	0.28	0.05	0.33
2000-01	31.0	5.9	14,145	0.22	0.04	0.26
1999-00	34.6	4.6	12,664	0.27	0.04	0.31

This information was taken from IPERS' Comprehensive Annual Financial Reports (CAFR). Administrative expenses remained fairly level around 0.05% of assets. The investment expenses varied over the years, with an average around 0.23%. Based on this data, it seems reasonable to assume that investment and administrative expenses together represent about 0.30% of the System's assets.

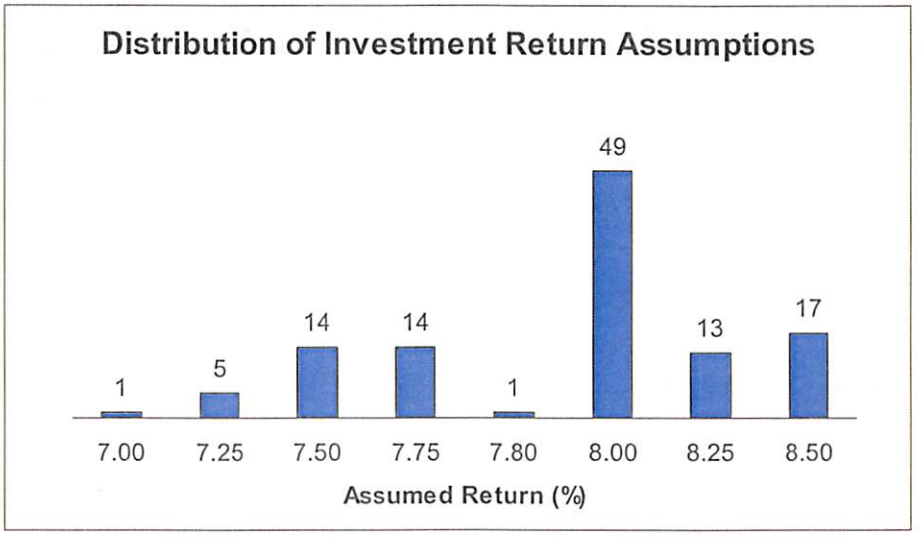
Reasonable Range and Recommendation: Based on the *ASOP No. 27* guidelines, we conclude that a reasonable range for the gross investment return is 6.68% to 8.78%. This range needs to be lowered to reflect the expenses assumed to be paid from the investment return. Given an assumed expense ratio of 30 basis points, we believe that a range between 6.38% and 8.48% is reasonable for an actuarial valuation of a retirement system with IPERS' asset allocation policy.

Components of Return	Percentile Results		
	25th	50th	75th
Real Investment Return	3.43%	4.47%	5.53%
Assumed Inflation	3.25%	3.25%	3.25%
Total Expenses	(0.30%)	(0.30%)	(0.30%)
Net Investment Return	6.38%	7.42%	8.48%

We recommend that the net investment return assumption remain at 7.5% per year. However, we would note that the 7.50% assumption lies in a different place within the reasonable range. In past experience studies the 7.5% assumption has been above the 50th percentile indicating a higher probability of meeting or exceeding 7.5%. For example, in the 2005 experience study, the reasonable range was 7.15% to 9.77% and the 50th percentile result was 8.45%. Based on this information, the probability of meeting or exceeding the 7.50% assumption is about 70%. Based on the findings of this current study, there is about a 49% chance the rate of

return will be 7.50% or higher. Based on the current capital market assumptions, the 7.50% rate of return is reasonable, but more aggressive than indicated in prior studies.

Although the assumption should not be set based on what other systems are doing, it does give some context to see how the assumption for IPERS relates to other large, public systems. Based on the October, 2009 NASRA Public Fund Survey, an assumption of 8.0% is the most common for other statewide systems. Only about 18% of the plans are using an assumption of 7.50% or less.



We would also note that the Colorado Public Employees Retirement Association lowered their investment return assumption from 8.5% to 8.0% about a year. In addition, CALPERS has also indicated that they are reviewing their current investment return assumption of 7.75% to determine whether it should be lowered.

Investment Return	
Current Assumption	7.50%
Reasonable Range	6.38% - 8.49%
Recommended Assumption	7.50%

WAGE GROWTH

Use in the Valuation: Estimates of future salaries are based on two types of assumptions. Rates of increase in the general wage level of the membership are directly related to inflation while individual salary increases due to promotion and longevity (referred to as the merit scale) occur even in the absence of inflation. The merit scale will be reviewed with the other demographic assumptions.

As part of determining the System's funding, the amortization period for the unfunded actuarial liability (UAL) is determined, based on amortization payments developed as a level percent of payroll. The general wage increase assumption is used to project covered payroll in future years which in turn is used to calculate the contribution rate required to amortize the UAL.

The current wage growth assumption is 0.75% above the price inflation rate, or 4.00% per year.

Historical Perspective: We have used statistics from the Social Security System on the National Average Wage back to 1951 (please note that 2008 is the most recent published data). For years prior to 1951, we studied the Total Private Nonagricultural Wages as published in *Historical Statistics of the U.S., Colonial Times to 1970*. The data for each year is documented in Exhibit 2 at the end of this section.

There are numerous ways to review this data. For consistency with our observations of CPI, the table below shows the compounded annual rates of wage growth for various 10-year periods, and for longer periods ended in 2008. Wage data for 2009 is not yet available.

Decade	Wages
1998-2008	3.7%
1988-1998	4.1
1978-1988	6.2
1968-1978	6.6
1958-1968	4.3

Period	Years	Wages
1998-2008	10	3.7%
1988-2008	20	3.9
1978-2008	30	4.7
1968-2008	40	5.1
1958-2008	50	5.0

The excess of wage growth over price inflation represents the increase in the standard of living (productivity), also called the real wage inflation rate. In general, real wage inflation had been decreasing until recently. The following table shows the compounded wage growth over various periods, along with the comparable inflation rate for the same period. The differences represent the real wage inflation rate. The data for each year is documented in Exhibit 3 at the end of this section.

Decade	General Wage Growth	CPI Incr.	Real Wage Inflation
1998-2008	3.7%	2.5%	1.2%
1988-1998	4.1	3.1	1.0
1978-1988	6.2	5.9	0.3
1968-1978	6.6	6.7	(0.1)
1958-1968	4.3	2.1	2.2

Period	General Wage Growth	CPI Incr.	Real Wage Inflation
1998-2008	3.7%	2.5%	1.2%
1988-2008	3.9	2.8	1.1
1978-2008	4.7	3.8	0.9
1968-2008	5.1	4.5	0.6
1958-2008	5.0	4.0	1.0

There has been debate on the issue of whether public sector employees will receive, over the long term, the same rewards for productivity as employees in the private sector, where productivity is more readily measurable. To our knowledge, no definitive research has been completed on this topic. Nevertheless, it is our opinion that public sector employees must be rewarded, even if there is a time lag, with the same productivity increases as those participating in the remainder of the economy.

Forecasts of Future Wages: The wage index we used for the historical analysis has been projected forward by the Office of the Chief Actuary of the Social Security Administration. In a report in May of 2009 the annual increase in the National Average Wage Index over the next 30 years under the intermediate cost assumption was 3.9%, 1.1% higher than the Social Security intermediate inflation assumption of 2.80% per year. The range of the assumed real wage inflation in the 2009 Trustees report was 0.5 to 1.7% per year.

Reasonable Range and Recommendation: Based on our professional judgment, we believe that a range between 0.50% and 1.50% is reasonable for the actuarial valuation. **We recommend that the long-term assumed real wage inflation rate remain at 0.75% per year.**

Real Wage Inflation	
Current Assumption	0.75%
Reasonable Range	0.50% - 1.50%
Recommended Assumption	0.75%

Based on our inflation assumption of 3.25%, and the range for the real wage inflation rate of 0.50% to 1.50% a range between 3.75% and 4.75% is reasonable for the general wage growth assumption. **We recommend the general wage assumption remain at 4.00%.**

General Wage Growth	
Current Assumption	4.00%
Reasonable Range	3.75% - 4.75%
Recommended Assumption	4.00%

Payroll Increase Assumption: In addition to setting salary assumptions for individual members, the aggregate payroll of IPERS is expected to increase, without accounting for the possibility of an increase in membership. See comments on growth in membership below.

A UAL (or Surplus) may be amortized as a percentage of payroll in determining future contribution rates as a percentage of pay. The payroll increase assumption is set equal to the wage growth assumption.

Payroll growth increases lower than expected have a negative effect on determining the UAL contribution rate, as a greater percentage of pay will be required to fund the UAL over a smaller expected payroll. Likewise, payroll growth increases greater than expected have a positive effect on determining the UAL contribution rate, as a lower percentage of pay will be required to fund the UAL over a larger expected payroll. **We recommend the payroll increase assumption remain at 4.00%.**

Growth in Active Membership: We propose continuing the assumption that no future growth in active membership will occur. This assumption affects the amortization payment rate, which is the portion of the total contributions used to liquidate the unfunded actuarial liability. With no assumed growth in active membership, future salary growth due only to general wage increases is being anticipated. If increases should occur not only because of wage increases but also because of additional active members, there will be a larger pool of salaries over which contributions would be paid which would result in a shorter amortization period.

Current conditions in public employment and the state of the national economy argue against anticipating any increase in membership for funding purposes. Furthermore, GASB Statement No. 25 will not accept a growth in membership assumption as meeting its required parameters for accounting disclosure purposes. Thus, if a membership growth assumption were to be used for funding purposes, a different set of calculations and results would be needed for accounting and disclosure purposes.

Section 5

Introduction to Demographic Assumptions

Actuarial Standard of Practice (ASOP) No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, provides guidance to actuaries giving advice on selecting demographic assumptions for defined benefit plans, such as IPERS.

The purpose of a study of demographic experience is to compare what actually happened to the individual members of the System during the study period (July 1, 2005, through June 30, 2009) with what was expected to happen based on the actuarial assumptions. Four years is a relatively short observation period, so we have considered experience in the previous observation period (2001 – 2005) when practical to do so. Where A/E ratios from prior experience studies are shown, the expected decrements are based on the current assumptions. Therefore, the A/E ratios shown in this report may not match the A/E ratios shown in the prior Experience Study report.

Studies of demographic experience generally involve three steps:

- First, the number of members changing membership status, called decrements, during the study is tabulated by age, duration, sex, group, and membership class (active, retired, etc.).
- Next, the number of members expected to change status is calculated by multiplying certain membership statistics, called exposure, by the expected rates of decrement.
- Finally, the number of actual decrements is compared with the number of expected decrements. The comparison is called the actual to expected ratio (A/E Ratio), and is expressed as a percentage.

In general, if the actual experience differs significantly from the overall expected results, or if the pattern of actual decrements, or rates of decrement, by age, sex, or duration deviates significantly from the expected pattern, new assumptions are considered. Recommended revisions are normally not an exact representation of the experience during the observation period. Professional judgment is required to set assumptions for future experience from past trends and current evidence, including a determination of the amount of weight to assign to the most recent experience.

In the prior experience study, a new methodology for analyzing the experience has been used, i.e. a "liability weighted" approach. The member's "liability" in the System is generally determined by the benefit amount and age of the member. Many assumptions already reflect differences by age directly. The other factor, benefit amount, is impacted by a member's salary and service. These two factors are used to estimate the member's relative benefit level and to weight experience (the exposure and actual occurrences are scaled by salary and service). This approach is particularly insightful when analyzing experience from a non-homogenous group. While we reviewed experience on both a count and liability basis for most decrements, when there was a significant difference between the two, we generally believe the liability weighted experience is more credible. Consequently, our recommendations for changes are based on the liability-weighted results.

The current and prior experience studies have included analysis of experience by subgroup for the regular membership (State, School, Other). In general, our analysis has indicated differences in behavior by members employed by different types of public employers. As actuaries, part of our responsibility is to estimate the value of future benefit payments. The assumptions used in the valuation are a critical component in the process of calculating the present value of future benefits. The better the assumptions

anticipate actual experience, the better the estimate of liability will be. Since the evidence shows variation in the behavior of members in the State, School and Other groupings, we believe the assumptions should reflect this difference. Therefore, in most cases we are recommending separate assumptions for State, School and Other employees.

When changes in assumptions are recommended, revised rates of decrement are tested by using them to recalculate the expected number of decrements during the study period, and the results are shown as revised A/E Ratios.

Salary adjustments, other than the economic assumption for wage inflation, are treated as a demographic assumption. However, the method of investigation needed for salaries is different from that used for the decrements.

It takes a fair amount of data to perform a credible study of demographic assumptions. Because the benefit provisions are similar and membership of the Special Services groups is relatively small, experience for the two Special Services groups has been aggregated. In addition, some assumptions have been selected based more on our professional judgement of reasonable future outcomes than actual experience.

The demographic assumptions studied for both Regular and Special Services groups include:

- Mortality
- Retirement
- Disability
- Termination of Employment
- Probability of Electing a Vested benefit
- Merit Salary Scale

Section 6

Mortality

One of the most important demographic assumptions is mortality because this assumption predicts when retirement payments will stop. It also predicts when pre-retirement death benefits will be paid. The life expectancies of current and future retirees are predicated on the assumed rates of mortality at each age. It is commonly known that rates of mortality declined throughout the 20th century and continue to decline, which means people, in general, are living longer. Furthermore, the experience of large, public retirement systems that cover School employees indicate that the School group continues to exhibit better mortality than the average working population.

Because of potential differences in mortality, we studied healthy retirees, disabled retirees and active members separately.

Regular Membership

Healthy Retirees: The valuation currently uses separate mortality assumptions for male and female members. The mortality assumption for healthy retirees was changed in the 1998-2001 experience study to the RP-2000 Generational Table for Healthy Annuitants (RP-2000), with the following adjustments:

Males	One Year Set Forward
Females	Two Years Set Back

The terms set forward and set back are used to indicate that mortality rates are adjusted by using rates for an older age (set forward) or a younger age (set back). Thus, a one year set forward indicates that a 65 year old is assumed to have the mortality rate associated with a 66 year old in the mortality table.

If the A/E Ratio is greater than 100% the assumptions have predicted fewer deaths than actually occurred, and with an A/E Ratio less than 100% the assumptions have predicted more deaths than have occurred. Because future improvements in mortality are explicitly reflected in the mortality rates applied in future years, there is no need for a "margin" (A/E above 100%).

The RP-2000 Table has been used in IPERS valuation since 2002. The table projects anticipated future mortality improvements on a "generational" basis, i.e. mortality rates are set by the year in which a member reaches a particular age, which is a more sophisticated approach to incorporating expected mortality improvements in the future. The RP-2000 Table uses a projection scale to model improvements in mortality in each future year. Since the study period covered the period July 1, 2005 to June 30, 2009, we projected mortality rates to 2007 for purposes of developing the expected number of deaths at each age. The results of the study for ages 55 to 90 are summarized in the following chart:

Postretirement Mortality for Healthy Lives	Exposures	Actual Deaths	Current Assumption	
			Expected Deaths	A/E Ratio
Males				
July 1, 2005 to June 30, 2006	25,905	866	1,017	85%
July 1, 2006 to June 30, 2007	26,506	876	1,049	84
July 1, 2007 to June 30, 2008	27,315	891	1,079	83
July 1, 2008 to June 30, 2009	27,952	963	1,109	87
July 1, 2005 to June 30, 2009	107,678	3,596	4,254	85
Females				
July 1, 2005 to June 30, 2006	43,850	981	1,059	93%
July 1, 2006 to June 30, 2007	45,292	1,037	1,086	95
July 1, 2007 to June 30, 2008	46,729	1,066	1,115	96
July 1, 2008 to June 30, 2009	48,180	1,055	1,141	93
July 1, 2005 to June 30, 2009	184,051	4,139	4,401	94

The overall A/E ratio for males and females in the current study was 85% and 94% respectively, compared to ratios of 91% and 96% in the 2005 study and 93% and 97% in the 2001 study. The RP2000 Table includes a projection scale (Scale AA), which is applied to mortality rates in the basic RP2000 Table to anticipate improvements in mortality. The A/E ratios indicate that mortality experience during the study period reflected better mortality than expected based on Scale AA. An A/E ratio below 100% is a concern because it means the life expectancy of members is understated and, therefore, so is the actuarial liability for these members. An adjustment to the mortality assumption is needed, particularly for males.

In this experience study, we continued to study experience by employer group (School, State, and Other) in an attempt to determine if the significant differences between groups identified in the last study still exist. Please note that records that did not have an employer code were excluded from this analysis. There were 323 male records and 1,111 female such records excluded. The results for ages 55 to 90 are shown below:

Healthy Retirees	2005-2009 Observations			A/E Ratio	
	Exposure	Actual	Expected	2005-2009	2001-2005
Male					
State	18,187	723	774	93%	90%
School	52,457	1,416	1,887	75%	83%
Other	36,792	1,423	1,578	90%	100%
Total	107,436	3,562	4,239	84%	91%
Female					
State	20,530	613	499	123%	109%
School	108,745	2,155	2,553	84%	86%
Other	54,148	1,302	1,328	98%	107%
Total	183,423	4,070	4,380	93%	96%

As has consistently been the case, School members exhibit the "best" mortality (i.e. longer life expectancy) of the three employer groups. We find this to be true in most public retirement systems, i.e. School employees typically exhibit lower mortality rates than other members. From an actuarial perspective, a separate

assumption for each group appears appropriate. As discussed earlier, we believe the best estimation of the System's liability for future benefit payments will be produced by using the assumptions that best reflect future experience. After three experience studies that reflect differences in mortality for School, State and Other members, we recommend adopting separate mortality assumptions for each as follows:

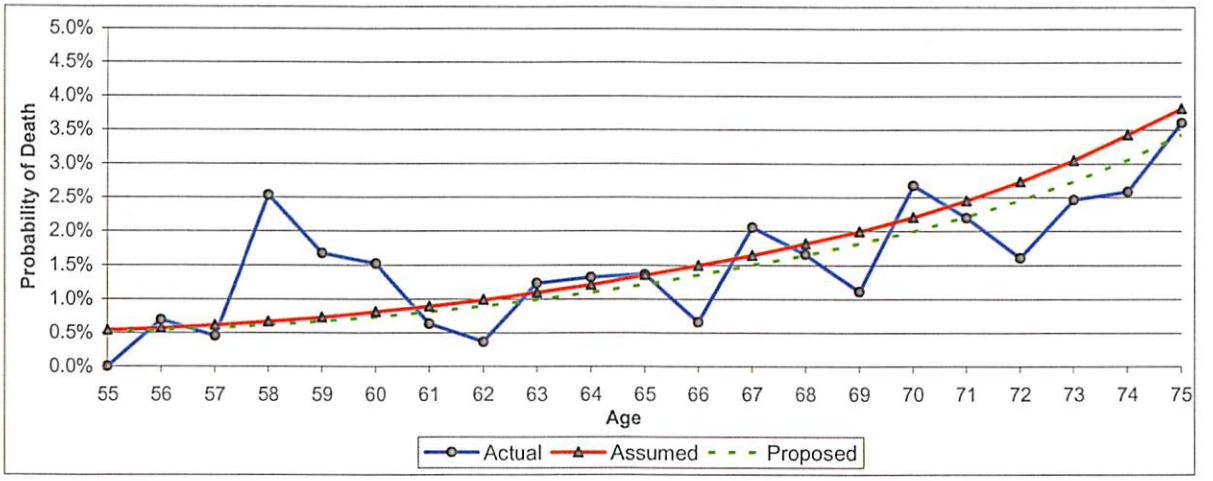
State	RP2000 Healthy Annuitant, Generational
Male	Unadjusted
Female	1 Year set forward with 70% decrease below age 75 and 10% decrease above age 75
School	RP2000 Healthy Annuitant, Generational
Male	2 Year set back with 10% decrease below age 75 and 10% increase above age 75
Female	3 Year set back with 25% decrease below age75 and 10% increase above age 75
Other	RP2000 Healthy Annuitant, Generational
Male	Unadjusted
Female	3 Year set back with 10% decrease below age 75 and 15% increase above age 75

In developing a recommended assumption, our goal was to provide a good fit to actual experience at the core retirement ages of 55 to 75, as most of the exposure and liability lies at those ages. It was difficult to find a standard table that fit experience at both the core retirement ages and at older ages. The use of age adjustments to a standard mortality table is one way to try to find a better fit. This approach still resulted in a poor fit at certain ages, so the additional adjustments were made as noted.

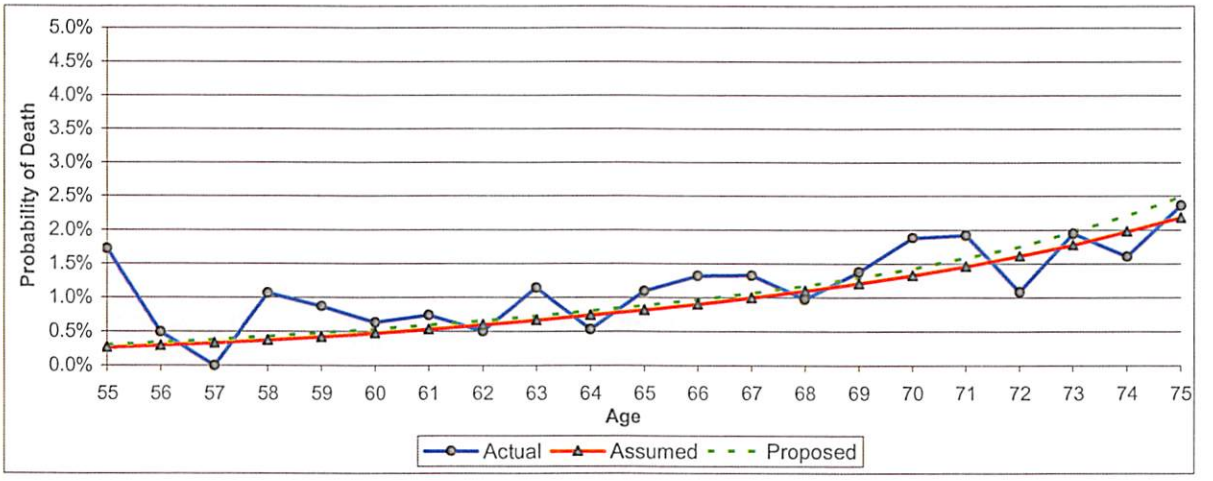
The proposed assumptions do provide a good fit to actual experience at the core retirement ages as shown below. The revised A/E ratios using the proposed assumptions are:

	A/E Ratio			
	Male		Female	
	Current	Proposed	Current	Proposed
State	93%	104%	123%	103%
School	75%	101%	84%	97%
Other	90%	100%	98%	101%
Total	84%	101%	93%	100%

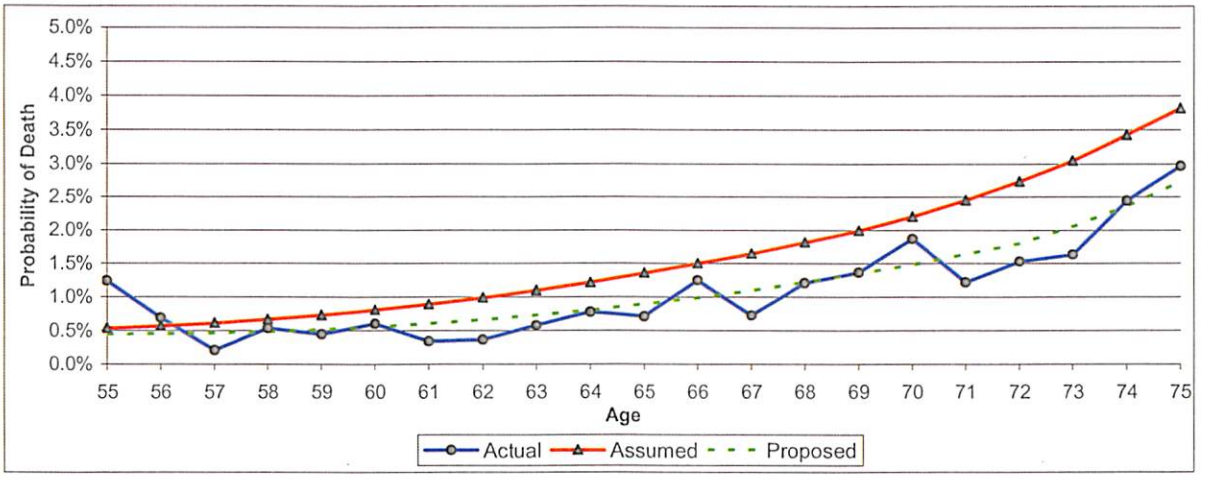
Males - State Membership



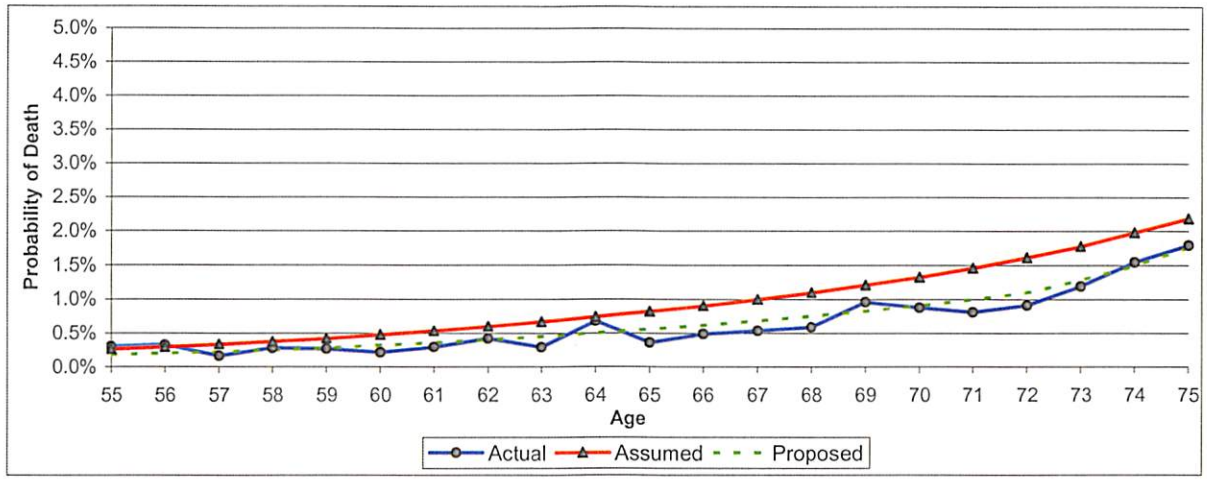
Females - State Membership



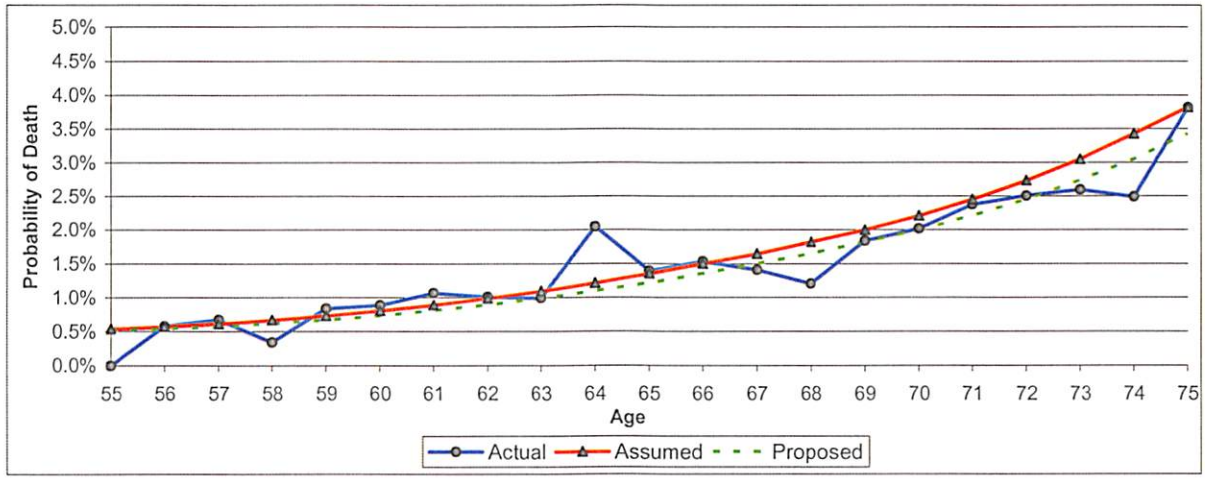
Males - School Membership



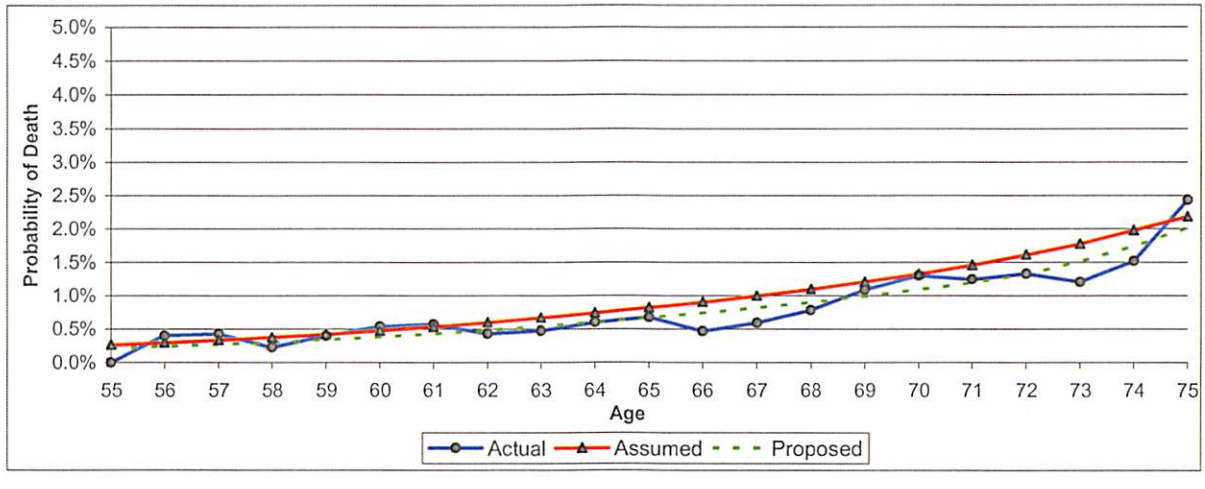
Females - School Membership



Males - Other Membership



Females - Other Membership



Beneficiaries: The mortality of beneficiaries applies to the survivors of members who have elected a joint and survivor option. There is never complete data on the mortality experience of beneficiaries prior to the death of the member because there is no requirement that the death be reported to the System (unless they elected Option 6, Joint & Survivor with pop-up). Therefore, we recommend we continue to follow standard convention and set the mortality of beneficiaries equal to the mortality of retired members of the same gender.

Disabled Members: The valuation assumes that disabled members, in general, will not live as long as retired members who met the regular service retirement eligibility. There tends to be more fluctuation in disabled mortality than healthy mortality because of differences in the types of disabilities and the relatively small number of disabled members. In addition, the smaller number of exposure results in more volatility. The current assumption is 2.50% plus the corresponding non-disabled rate, based on the 1994 Group Annuity Mortality Table (100% for males and 95% for females), but not less than 3.00%. Based on this assumption, the A/E Ratios for males and females in the current study were 112% and 110%, respectively. In the prior study the A/E ratios were 124% and 93%, respectively. We would like to move to the Disabled Mortality Table that was published as part of the RP2000 Tables. We recommend the RP2000 Disabled Mortality Table, Generational with a one-year set back for males and a three-year set forward for females be used for all regular members. Given the smaller dataset, there is less credibility in the experience so we prefer to use a standard table without modification of the rates as was done for healthy retirees. The resulting A/E ratios for males and females are 102% and 105%, respectively.

Active Members: This assumption predicts eligibility for death benefits for active members prior to retirement, rather than the expected lifetime for pension payments. For active member mortality, it is more conservative to have an A/E Ratio less than 100% because active member death benefits are generally less costly than retirement benefits. Based on the observed data, the A/E ratio for males and females was 69% and 43%, respectively.

The current assumption is the RP-2000 Employee Table with the same adjustments for males and females as for retired lives. Rates of mortality among active members may be impacted by active members first terminating or moving to disabled status before death. In addition, the number of deaths from active membership may be understated because the criteria for reporting for purposes of this study requires that a members' date of death and payment date occur before June 30. For these reasons, it is likely active death rates are higher than the experience data might indicate.

The observed A/E Ratios for active members ages 25 to 64 are shown in the following chart.

Active Member Mortality	Exposures	Actual Deaths	Expected Deaths	A/E Ratio
Males				
July 1, 2005 to June 30, 2006	46,010	54	80	68%
July 1, 2006 to June 30, 2007	45,948	68	82	83
July 1, 2007 to June 30, 2008	45,838	48	82	59
July 1, 2008 to June 30, 2009	46,127	56	84	67
July 1, 2005 to June 30, 2009	183,923	226	328	69%
Females				
July 1, 2005 to June 30, 2006	96,604	65	151	43%
July 1, 2006 to June 30, 2007	97,849	85	155	55
July 1, 2007 to June 30, 2008	99,201	55	158	35
July 1, 2008 to June 30, 2009	100,511	61	161	38
July 1, 2005 to June 30, 2009	394,165	266	625	43

We also studied active member mortality by group. The results are summarized below:

Active	2005-2009 Observations			A/E Ratio	
Members	Exposure	Actual	Expected	Current	Proposed
Male					
State	32,453	37	61	61%	86%
School	74,694	70	127	55%	79%
Other	76,776	119	140	85%	93%
Total	183,923	226	328	69%	87%
Female					
State	46,811	37	77	48%	73%
School	230,369	144	360	40%	61%
Other	116,985	85	188	45%	70%
Total	394,165	266	625	43%	65%

We recommend the following assumptions be adopted for each group:

State	
Male	RP2000 Employee Table, Generational, set back 3 years
Female	RP2000 Employee Table, Generational, set back 8 years
School	
Male	RP2000 Employee Table, Generational, set back 3 years
Female	RP2000 Employee Table, Generational, set back 8 years
Other	
Male	RP2000 Employee Table, Generational, no adjustment
Female	RP2000 Employee Table, Generational, set back 8 years

Special Services Members

For Special Services members, we studied healthy retired and active mortality experience. There were an insufficient number of female members to produce statistically reliable information. Therefore, our analysis was performed for male members only. While there is more data for males, the number of members is much smaller than the regular membership. Therefore, less credibility is assigned to the results.

The current assumption for this group for healthy retirees is the RP-2000 Healthy Annuitant Table with a three year age set forward for males and no age adjustment for females. For actives, the RP-2000 Employee Table with the same age adjustments is used. It is assumed that 5% of pre-retirement deaths are service related.

The results of this study, along with the prior experience studies, are shown below.

	2005-2009 Observations		A/E Ratios		
Deaths	Actual	Expected	2005-2009	2001-2005	1998-2001
Current Assumption					
Healthy Retirees	50	65	77%	91%	118%
Actives	15	35	43%	96%	45%

There is much less data to rely on for the Special Service group. Based on the experience we have observed in other larger law enforcement systems and the observed data in this study, we are recommending elimination of the three-year age set forward. The resulting A/E ratio for ages 55 to 75 is 104%. For ages 55 to 90, the A/E ratio drops to 79%, but the data is very sparse at the older ages and we do not assign much credibility to it.

We recommend the active member mortality be changed to eliminate the age set forward. The resulting A/E ratio using the proposed assumption is 71%.

We recommend that the mortality assumptions described here and detailed in Appendices B and C be adopted.

Section 7

Retirement

Service retirement measures the change in status from active membership directly to retirement. This assumption does not include the retirement patterns of the retirees who terminated from active membership and then commence benefits at a later date. That experience is studied separately and is discussed in the inactive vested member topic later in this section.

Regular Membership

The requirement for early retirement with a reduced benefit is age 55. The requirements for retirement with a full (unreduced) benefit are age 65 or age 62 with 20 years of service (referred to as "normal retirement"). Full, unreduced benefits are also available at or after age 55 if age plus service is at least equal to 88 (referred to as Rule of 88).

Among the members at any age who are eligible to retire with unreduced benefits (Rule of 88 or normal retirement), those who are in their first year of meeting the eligibility requirements are generally more likely to retire than those who met that requirement more than a year ago. We refer to retirement rates for those in their first year of such eligibility as "select" and those beyond that first year as "ultimate." This select/ultimate approach is the basis for evaluation of experience.

The summary results of our experience study, using counts, are shown below:

			A/E Ratios		
Retirement	Actual	Expected	2005-2009	2001-2005	1998-2001
Early	6,080	9,195	66%	83%	89%
Select	2,625	3,191	82%	92%	75%
Ultimate	7,044	9,836	72%	84%	77%
Total	15,749	22,222	71%	85%	82%

Based on this data, there were fewer retirements during the study period than expected. This is not unexpected given the economic conditions that occurred in this study period. However, recent valuations have shown experience losses on retirements despite the fact that a smaller than expected number of members retired. This occurred because the demographic composition of the group retiring was significantly different from that of the total eligible group. In general, the average salary and service for those retiring was higher than the average salary and service for the total group eligible to retire. The liability-weighted analysis captures these differences in the experience results and confirms the experience observed from year to year in the valuation. The members who retired during the study period had higher liability (due to higher salary and service) than the average for the group. This was also observed in the last experience study. Given the economic period in which the study occurred, the observed experience may not necessarily be representative of future experience. The State offered early retirement incentives in 2001, 2002 and 2004 which could have impacted the number of retirements in the early part of the study period. The economic conditions, particularly in the last year of the study period (7/1/08 to 6/30/09), also could have contributed to fewer retirements in that period.

	A/E Ratio			
	Count		Liability Weighted	
Retirement	2005-09	2001-05	2005-09	2001-05
Early	66%	83%	99%	124%
Select	82%	92%	101%	118%
Ultimate	72%	84%	85%	109%

The A/E ratios based on count would argue that actual retirements are significantly lower than expected using the current actuarial assumptions and consequently, the retirement rates should be lowered. However, a different evaluation results when experience is analyzed factoring in the liability of members. The current retirement rates appear to need little adjustment, particularly early and select rates.

There is a high probability that retirement rates, especially the utilization of the Rule of 88, will vary among different employer groups. We have observed this in other systems that cover a broad range of public employees. Part of the higher utilization by School employees is often the result of ongoing early retirement incentive programs offered by local school districts. As in the last two experience studies, we separately studied experience by group: State, School and Other. Our findings for ages 55 to 64 are summarized below.

				A/E Ratio	
Early Retirement	Exposure	Actual Retirements	Expected Retirements	Count	Liability
State					
7/1/05 to 6/30/06	3,753	140	291	48%	60%
7/1/06 to 6/30/07	3,721	206	285	72%	91%
7/1/07 to 6/30/08	3,816	174	293	59%	82%
7/1/08 to 6/30/09	3,941	161	313	52%	66%
Total	15,231	681	1,182	58%	75%
School					
7/1/05 to 6/30/06	13,187	897	1,057	85%	145%
7/1/06 to 6/30/07	13,704	844	1,091	77%	137%
7/1/07 to 6/30/08	14,152	872	1,150	76%	125%
7/1/08 to 6/30/09	14,521	753	1,216	62%	96%
Total	55,555	3,366	4,514	75%	124%
Other					
7/1/05 to 6/30/06	9,224	478	801	60%	79%
7/1/06 to 6/30/07	9,909	541	865	63%	84%
7/1/07 to 6/30/08	10,233	547	894	61%	86%
7/1/08 to 6/30/09	10,520	467	939	50%	63%
Total	39,886	2,033	3,499	58%	77%

Similarly, we separately studied experience by group: State, School and Other. Our findings for ages 55 to 65 (First Unreduced) or 70 (Ultimate) are summarized below.

Select (First Unreduced)	Exposure	Actual Retirements	Expected Retirements	A/E Ratio	
				Count	Liability
State					
7/1/05 to 6/30/06	432	52	115	45%	37%
7/1/06 to 6/30/07	419	110	110	100%	101%
7/1/07 to 6/30/08	449	92	118	78%	75%
7/1/08 to 6/30/09	442	66	118	56%	62%
Total	1,742	320	461	69%	69%
School					
7/1/05 to 6/30/06	1,579	430	412	104%	140%
7/1/06 to 6/30/07	1,646	414	420	99%	131%
7/1/07 to 6/30/08	1,688	376	430	87%	114%
7/1/08 to 6/30/09	1,709	356	440	81%	109%
Total	6,622	1,576	1,702	93%	123%
Other					
7/1/05 to 6/30/06	823	165	233	71%	80%
7/1/06 to 6/30/07	893	197	255	77%	95%
7/1/07 to 6/30/08	963	186	276	67%	75%
7/1/08 to 6/30/09	954	181	265	68%	72%
Total	3,633	729	1,029	71%	80%

Ultimate	Exposure	Actual Retirements	Expected Retirements	A/E Ratio	
				Count	Liability
State					
7/1/05 to 6/30/06	1,243	165	339	49%	44%
7/1/06 to 6/30/07	1,432	388	386	101%	106%
7/1/07 to 6/30/08	1,399	265	374	71%	71%
7/1/08 to 6/30/09	1,585	299	439	68%	70%
Total	5,659	1,117	1,538	73%	74%
School					
7/1/05 to 6/30/06	3,959	947	1,128	84%	108%
7/1/06 to 6/30/07	4,192	893	1,190	75%	101%
7/1/07 to 6/30/08	4,570	988	1,316	75%	95%
7/1/08 to 6/30/09	4,938	977	1,399	70%	86%
Total	17,659	3,805	5,033	76%	96%
Other					
7/1/05 to 6/30/06	2,365	474	716	66%	78%
7/1/06 to 6/30/07	2,644	519	789	66%	79%
7/1/07 to 6/30/08	2,844	590	851	69%	78%
7/1/08 to 6/30/09	3,085	539	910	59%	67%
Total	10,938	2,122	3,266	65%	75%

We also compared experience during this study period with that occurring in the prior study as shown below:

Early	A/E Ratios				
	Count Basis			Liability Weighted	
	2005-09	2001-05	1998-01	2005-09	2001-05
State	58%	79%	90%	75%	96%
School	75%	97%	94%	124%	160%
Other	58%	66%	81%	77%	89%

Select	A/E Ratios				
	Count Basis			Liability Weighted	
	2005-09	2001-05	1998-01	2005-09	2001-05
State	69%	90%	80%	69%	92%
School	93%	100%	74%	123%	134%
Other	71%	79%	70%	80%	96%

Ultimate	A/E Ratios				
	Count Basis			Liability Weighted	
	2005-09	2001-05	1998-01	2005-09	2001-05
State	73%	90%	82%	74%	96%
School	76%	87%	75%	96%	122%
Other	65%	72%	70%	75%	89%

On both the count basis and liability weighted basis there were fewer retirements than expected in this study period. Based on our findings, we recommend separate assumptions for State, School and Other groups. In addition, given that A/E ratios were uniformly higher in the prior study and economic conditions during this study period may have caused fewer members to retire, we suggest developing recommended assumptions that provide some conservatism to anticipate higher retirements in the future than occurred in the study period. As a result, the revised A/E ratios on a liability weighted basis using the proposed assumptions are less than 100% as shown below:

	State	School	Other
Early	84%	90%	89%
Select	87%	92%	88%
Ultimate	87%	89%	87%

Inactive Vested Members

Currently, inactive vested members who leave their contributions with the System are assumed to retire at age 62. We reviewed the experience during the observation period and found that age 62.05 was the average retirement age. We recommend the current assumption of age 62 be retained for inactive vested members.

Special Services Groups

The eligibility requirement for retirement benefits is different for the two Special Services groups. SS1 (Sheriffs and Deputies) can retire at age 50 with 22 years of service. Members of SS2 are eligible to retire at age 55. Therefore, a different assumption is used in valuing the liabilities for these two groups. The retirement eligibility for SS1 changed from age 55 to age 50 commencing in FY2005. The change was phased in over five years as follows:

Age	Effective Date
54	July 1, 2004 (FY2005)
53	July 1, 2005 (FY2006)
52	July 1, 2006 (FY2007)
51	July 1, 2007 (FY2008)
50	July 1, 2008 (FY2009)

When the age 50 retirement provision was added, the assumption was set without the benefit of actual experience. Given that fact, the rates were set with intent to provide some conservatism as actual experience unfolded. This is the first experience to be measured and little credibility can be given to it since provisions were being phased in during this period. The results of our investigation of retirement experience for ages 50 (SS1) or 55 (SS2) to 65 during this study period are shown below.

				A/E Ratio	
	Exposure	Actual Retirements	Expected Retirements	Count	Liability
SS1					
7/1/05 to 6/30/06	198	34	41	83%	100%
7/1/06 to 6/30/07	246	44	54	81%	102%
7/1/07 to 6/30/08	282	38	63	60%	62%
7/1/08 to 6/30/09	357	55	87	63%	80%
Total	1,083	171	245	70%	83%
SS2					
7/1/05 to 6/30/06	691	53	110	48%	69%
7/1/06 to 6/30/07	833	90	134	67%	110%
7/1/07 to 6/30/08	908	79	146	54%	83%
7/1/08 to 6/30/09	1,003	110	159	69%	115%
Total	3,435	332	549	60%	95%

Because the phase-in in retirement eligibility for SS1 occurred during our study period, the experience observed for that group may not be representative of long-term trends particularly for ages. However, the analysis for SS1 on both a count and a liability weighted basis indicates fewer retirements than expected. We are recommending some reduction in rates to move part of the way toward actual experience. The resulting A/E ratio for ages 50 to 65 is 86%.

SS2 experience varied dramatically in each year of the four-year study period with A/E ratios above 100% in two of the four years. We are uncertain as to why this experience variation occurred. There was a significant increase in the size of the group during the study period due to the addition of Department of Corrections, county jailers, and EMS personnel, but the impact of this upon retirement rates is uncertain. Since the emerging trends are not apparent, we are recommending small changes to the current assumption. The resulting A/E ratio using the proposed assumptions is 95%.

We recommend that the retirement assumptions described here and detailed in Appendices B and D be adopted.

Section 8

Disability

Regular Membership

The current disability assumption for the regular membership, which utilizes separate disability rates for males and females, was first introduced in the 1998 Experience Study. The table below indicates the number of actual and expected disabilities during the study period and the resulting A/E Ratios. In general, ratios below 100% indicate fewer disabilities than expected which would result in lower actuarial liability than expected.

	Male			Female		
Disabilities	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
7/1/05 to 6/30/06	91	112	81%	116	135	86%
7/1/06 to 6/30/07	71	115	62%	80	139	58%
7/1/07 to 6/30/08	68	116	59%	70	143	49%
7/1/08 to 6/30/09	39	117	33%	53	146	36%
Total	269	460	58%	319	563	57%

Because of the time lag involved in reporting and processing disabilities, it is very likely many of the members who became disabled in the last year of the study period were not reported by the time the valuation data was provided so that year was eliminated from the data in recommending changes to the current assumption:

			A/E Ratio		
Disabilities	Actual	Expected	2005-2008	2001-2004	1998-2001
Males	230	344	67%	65%	90%
Females	266	417	64%	99%	98%
Total	496	761	65%	83%	94%

Overall, there were fewer disabilities than expected as demonstrated by A/E ratios below 100%. The male experience was consistent with the prior study, but female experience was down significantly from the prior study.

We also studied disability experience by group to determine if differences exist. Our findings are summarized in the following table:

Disabilities	Exposure	Actual	Expected	A/E Ratio Count	A/E Ratio Liability
State					
Male	20,201	40	69	58%	37%
Female	28,303	51	55	93%	73%
	48,504	91	124	73%	66%
School					
Male	43,556	59	132	45%	31%
Female	131,486	117	243	48%	30%
	175,042	176	375	47%	30%
Other					
Male	43,366	131	143	92%	76%
Female	62,046	98	119	82%	66%
	105,412	229	262	87%	72%

In both the current and prior experience study, the A/E Ratio for males has been significantly less than 100%, indicating significantly fewer disabilities than expected. Differences exist by group so we recommend separate assumptions for State, School and Other. The revised A/E ratios, using the proposed assumptions, are:

	State	School	Other
Male	103%	94%	92%
Female	93%	68%	89%

We recommend the rates be lowered for State and School males to reflect part of the observed experience. The A/E ratios on a count basis for females were close to 100% in both of the two prior studies so we prefer to minimize changes to the female rates largely to reflect only differences observed by group. Therefore, only School rates were changed for females.

Special Services Membership

There are two disability assumptions used in the valuation: (1) ordinary disability and (2) accidental disability. For purposes of the experience study for SS1 and SS2 all disability experience was combined and the expected number of disabilities was the sum of the accidental plus ordinary disability rates times the exposure at each age.

The A/E ratio in the prior study was 10% (38/400 = 10%). As a result, the disability rates were reduced significantly. During the current study period, there were 36 disabilities compared to 457 expected, resulting in an A/E ratio of 8%. Due to the small number of exposure for female members in these groups, one set of rates is used for all members. Furthermore due to the small size of the group (as compared to the regular membership) actual experience, although considered, cannot be given full credibility. The disability rates were reduced significantly in the last experience study, but the A/E ratio is still well below 100%. We recommend reducing the rates again to better match experience, but maintaining some margin for volatility in future experience. Therefore, the A/E ratio using the proposed assumption is 67%.

We recommend that the disability assumptions described here and detailed in Appendices B and E be adopted.

Section 9

Termination of Employment (Withdrawal)

This section of the report summarizes the results of our study of terminations of employment for reasons other than death, retirement, or disability. Rates of termination can vary by both age and years of service and gender. In general rates of termination are highest at younger ages and in the early years of employment.

Regular Membership

The following table shows that nearly 50% of all terminations occur for members within their first two years of membership and about 80% occur in the first six years of membership.

Withdrawal by Membership Year				
Membership Class	Less Than 2 Years	2nd – 6th Year	7th & Higher Year	All Years
Male	5,868	3,842	1,928	11,638
Female	13,320	10,866	5,132	29,318
Total	19,188	14,708	7,060	40,956

The number of withdrawals includes all members reported to have terminated employment. Some of these members subsequently receive refunds of contributions; some return to active membership and some leave their contributions with the System until retirement. This is addressed in the use of explicit assumptions about what happens to the members after they terminate employment. (See Section 10 of this report.)

Generally speaking, termination of employment rates have been trending lower. While some of this may be a reflection of caution in uncertain economic times, we also believe some of this is a permanent change and should be reflected. Assuming lower termination rates implies that more members will ultimately remain employed and then retire directly from IPERS, thereby adding to the cost of providing benefits.

The following chart shows the actual and expected number of terminations for causes other than death, retirement, or disablement, and the corresponding A/E Ratios. In general, terminations lower than expected increase the liabilities, but in terms of the impact on the valuation, which members terminate can be more important than the number of terminations. Overall, the assumptions predicted the number of actual terminations fairly well with an overall A/E Ratio for males of 102% and 94% for females. The specific results are summarized on the table on the following page.

Terminations	Exposure	Actual	Expected	A/E Ratio – Count		
				2005-2009	2001-2005	1998-2001
Males						
Year 0-1	23,928	5,868	5,383	109%	104%	96%
Year 2	9,554	1,438	1,362	106%	94%	92%
Year 3	7,793	877	887	99%	88%	95%
Year 4-6	20,523	1,527	1,643	93%	90%	98%
Year 7-8	12,597	595	656	91%	92%	95%
Year 9+	66,468	1,333	1,529	87%	88%	98%
Total	140,863	11,638	11,460	102%	96%	94%
Females						
Year 0-1	56,849	13,320	13,906	96%	97%	92%
Year 2	25,161	3,885	4,020	97%	95%	91%
Year 3	20,531	2,483	2,559	97%	89%	92%
Year 4-6	52,418	4,498	5,108	88%	85%	92%
Year 7-8	30,583	1,791	1,843	97%	93%	107%
Year 9+	133,837	3,341	3,848	87%	92%	97%
Total	319,379	29,318	31,284	94%	93%	90%
Total Male and Female	460,242	40,956	42,744	96%	94%	91%

As we've discussed earlier, we often see different results when the experience is evaluated on a liability weighted basis. The results from the current and prior study on both the count and liability basis are shown below.

Terminations	A/E Ratio			
	Count		Liability Weighted	
	2005-09	2001-05	2005-09	2001-05
Males				
Year 0-1	109%	104%	64%	65%
Year 2	106%	94%	75%	73%
Year 3	99%	88%	71%	67%
Year 4-6	93%	90%	71%	70%
Year 7-8	91%	92%	70%	72%
Year 9+	87%	88%	61%	64%
Females				
Year 0-1	96%	97%	60%	68%
Year 2	97%	95%	73%	76%
Year 3	97%	89%	72%	71%
Year 4-6	88%	85%	64%	65%
Year 7-8	97%	93%	72%	72%
Year 9+	87%	92%	52%	58%

Overall, the number of terminations for males was close to expected (A/E ratio of 102%) and for females was slightly lower than expected (A/E ratio of 94%). A/E ratios were slightly higher than observed in the

last study, but not significantly different. The liability weighted experience indicated rates should be lowered, which is consistent with the experience in the prior study period.

As in the prior study, we again analyzed experience to see if differences exist by employer group. Our results on a count basis, based on the current assumptions, are shown below:

	A/E Ratios – Count Basis								
	State			School			Other		
Terminations	2005-09	2001-05	1998-01	2005-09	2001-05	1998-01	2005-09	2001-05	1998-01
Males									
Year 0-1	94%	133%	86%	103%	103%	192%	118%	95%	166%
Year 2	77%	105%	81%	98%	96%	84%	122%	88%	75%
Year 3	70%	92%	105%	88%	88%	96%	119%	87%	91%
Year 4-6	67%	74%	81%	92%	95%	105%	102%	92%	95%
Year 7-8	63%	73%	79%	86%	89%	91%	107%	102%	103%
Year 9+	58%	71%	93%	79%	86%	86%	111%	97%	184%
Females									
Year 0-1	77%	116%	104%	92%	92%	89%	105%	98%	90%
Year 2	71%	107%	74%	88%	67%	76%	118%	82%	83%
Year 3	65%	77%	72%	89%	67%	73%	119%	80%	92%
Year 4-6	63%	74%	86%	84%	81%	84%	104%	95%	110%
Year 7-8	56%	75%	92%	90%	87%	93%	127%	113%	134%
Year 9+	51%	84%	77%	78%	80%	82%	126%	120%	141%

The results on a liability weighted basis are shown in the following chart:

	A/E Ratios – Liability Weighted					
	State		School		Other	
Terminations	2005-09	2001-05	2005-09	2001-05	2005-09	2001-05
Males						
Year 0-1	61%	89%	52%	62%	75%	58%
Year 2	60%	79%	67%	74%	88%	70%
Year 3	60%	73%	59%	66%	87%	65%
Year 4-6	59%	60%	65%	74%	81%	72%
Year 7-8	60%	62%	64%	66%	82%	82%
Year 9+	50%	59%	52%	58%	81%	76%
Females						
Year 0-1	53%	81%	50%	56%	74%	76%
Year 2	61%	87%	65%	67%	91%	82%
Year 3	57%	62%	62%	67%	94%	80%
Year 4-6	55%	59%	58%	59%	78%	76%
Year 7-8	50%	66%	62%	64%	102%	91%
Year 9+	39%	67%	41%	46%	87%	81%

For the State group, terminations were lower than expected on both a count and a liability weighted basis. The opposite is true for the Other group. In general, A/E ratios were higher in this study period than the prior period on both a count and liability basis. The results for the School group were relatively consistent in both study periods.

There appear to be material differences in rates of termination of employment by employer group at most service durations and we recommend separate assumptions be used for each group.

When the data is split into three separate groups and then further divided by gender, years of service and age, the number of exposure in each subcategory becomes much smaller than when it was one combined group and therefore, less credible. As we studied the data further, there was a stronger correlation to service than to age. We also compared experience by gender and noted some differences. Based on our analysis, we are recommending the termination of employment assumption be developed based only on years of service and gender for the regular membership groups. In addition, due to the economic conditions and uncertainty during the study period, we are not convinced the termination rates observed are indicative of long term rates. Therefore, we are recommending assumptions with rates somewhat higher than the actual experience. The A/E ratios based on the recommended rates are:

	A/E Ratio – Proposed (Liability Weighted)	
	Male	Female
State	92%	89%
School	87%	88%
Other	87%	85%

Special Services Membership

Due to the small number of female members in the Special Service groups there is insufficient data upon which to develop separate assumptions by gender. In our analysis we also found that there was a stronger correlation with age than with service for the Special Services groups. Therefore, a service based assumption was not recommended. An age based assumptions is used for all Special Service members. The results of our study for ages 25 to 54 are shown below:

Terminations	Exposure	Actual	Expected	A/E Ratio
July 1, 2005 to June 30, 2006	5,968	250	235	106%
July 1, 2006 to June 30, 2007	6,262	266	247	108%
July 1, 2007 to June 30, 2008	6,492	313	255	123%
July 1, 2008 to June 30, 2009	6,783	391	270	145%
Total	25,505	1,220	1,008	121%

Although the observed A/E Ratio of 121% on a count basis indicates the current assumption is too high, the experience on a liability weighted basis indicates the opposite. The A/E ratio is 60%, which indicates much lower withdrawals than expected. This is consistent with the experience in the prior study. As with other assumptions, we are following the liability weighted results. We recommend the current assumption be lowered part of the way to reflect actual experience. The revised liability weighted A/E ratio using the recommended assumption is 84%.

We recommend that the termination of employment assumptions described here and detailed in Appendices B and F be adopted.

Section 10

Probability of Electing a Deferred Vested Benefit

Some members who terminate active employment elect to receive a distribution of their member account balance and the appropriate share of their employer balance. We assume that all non-vested members receive a refund of their account balance at the time of termination. In addition, we assume that a certain percentage of active vested members who terminate also elect a refund, thus forfeiting a vested right to their employer-provided benefit. The remaining members are thus assumed to elect to receive a deferred vested benefit at retirement.

Typically, there is a potential "lag" from a member's date of termination of employment to the date the refund is requested and made. Prior analysis indicated that about 75% of refunds occur within two years of termination. Due to the fact that many of the members who terminated in the last year of the Experience Study period may not have requested or completed their refund, so the last year of data is excluded in our analysis.

Regular Membership

The current assumption is a service-based assumption. The following table shows the number of vested members who terminated and elected to leave their funds with the System and receive a deferred vested benefit, along with the expected count.

			A/E Ratio			
			Count		Liability Weighted	
Electing a Vested Benefit	Actual	Expected	2005-09	2001-05	2005-09	2001-05
Male	1,666	1,651	101%	113%	95%	107%
Female	4,484	4,785	94%	108%	92%	102%
Total	6,150	6,436	96%	109%	93%	104%

Again we studied this experience by employer group to see if differences exist. Our results are shown below:

	2005-09 Observations			A/E Ratio –Count	
Electing a Vested Benefit	Exposure	Actual	Expected	2005-09	2001-05
Male					
State	375	248	247	100%	94%
School	1,331	1,053	864	122%	109%
All Others	1,678	1,224	1,093	112%	98%
Total	3,384	2,525	2,204	115%	101%
Female					
State	595	375	439	85%	88%
School	4,690	3,726	3,404	109%	107%
All Others	3,329	2,448	2,428	101%	93%
Total	8,614	6,549	6,271	104%	99%

The experience in this study period was consistent with that in the prior experienced study. School employees continued to show the lowest incidence of taking refunds, and therefore the highest incidence of leaving contributions with the System. This seems reasonable as it is common for women, in particular, to leave their teaching position for several years to have and raise children.

Legislation passed in the 2010 Session changes the eligibility for a vested benefit from four to seven years of service. Because the assumption regarding election of a deferred vested benefit is based on years of service, no special consideration for the change to seven years was necessary. In performing the valuation calculations, a member who is not vested at termination will be assumed to take a refund, while this assumption will apply to those members assumed to be vested when employment ends.

We recommend separate assumptions be used for each group. The A/E ratio for each group based on the proposed assumption is shown below:

	A/E Ratio – Liability Weighted	
	Male	Female
State	94%	90%
School	93%	98%
Other	105%	98%

Special Services

Because the group is small and termination rates are low, there is little credible data upon which to base this assumption. The A/E Ratio based on the current assumption was 104% for males and 88% for females. Comparable numbers on a liability weighted basis were 88% and 67% for males and females. We recommend the current rates be retained.

We recommend that the probability of electing a deferred vested benefit assumptions described here and detailed in Appendices B and G be adopted.

Section 11

Merit Salary Scale

Estimates of future salaries are based on assumptions for two types of increases:

1. Increases in each individual's salary due to promotion or longevity (often called merit scale), and

2. Increases in the general wage level of the membership, which are directly related to price and wage inflation.

Earlier in this report, we recommended that the second of these rates, general wage inflation remain at 4.0% (3.25% price inflation and 0.75% real wage inflation).

Although future salary increases are the result of two components, it is difficult to isolate the true salary adjustment due to inflation and productivity given the number of different employers in IPERS and potential varying conditions for each employer. Therefore, the experience study reviewed total salary increases for the period. We then eliminated the percentage attributable to general wage growth to try and isolate the merit scale. The general wage growth for the period was determined by reviewing actual salary increases by duration (years of service). For those members with more than 30 years of service, we anticipate little, if any, merit scale and attribute the salary increase to increases in the general wage level. The results indicated a general wage increase during the study period of around 4.0%, the same as the assumed rate. If the general wage assumption is subtracted from the total salary scale, the result is the merit scale.

Regular Membership

We compared individual salary increases for all members who were active in any two consecutive years (e.g. 2005 and 2006, 2006 and 2007, etc.). The overall results, by year of service, of the four years studied are shown below:

	Average Increase in Salaries		
	2005-2009		
Years of Service	Actual	Expected	Difference
≤ 1	18.6%	15.2%	3.4%
2	10.2%	9.6%	0.6%
3	8.7%	7.9%	0.8%
4-5	7.6%	7.0%	0.6%
6-7	6.9%	6.3%	0.6%
8-10	6.6%	5.8%	0.8%
11-15	5.9%	5.2%	0.7%
16-20	5.3%	4.7%	0.6%
21+	4.4%	4.2%	0.2%
Total	6.7%	5.7%	1.0%

Overall, actual salary increases over the four-year study period were 1.0% higher than expected. Given the experience observed in aggregate over the four-year study period, the experience in each year was also reviewed individually, as shown below:

	Salary Increases	
Fiscal Year	Actual	Expected
2006	6.6%	5.6%
2007	6.2%	5.7%
2008	7.3%	5.7%
2009	6.7%	5.7%

We also analyzed the salary experience by group for each year in the study period. The results are shown below:

Fiscal Year	School	State	Other
2006	6.9%	5.7%	6.8%
2007	7.0%	6.3%	5.1%
2008	8.3%	6.4%	6.5%
2009	8.1%	5.9%	5.3%
2006-09	7.6%	6.1%	5.9%

Salary increases for the School group during the study period were very high (7.6% compared to an expected increase of 5.6%). The Iowa Legislature passed SF277 in 2007 with the goal of raising teacher compensation in Iowa from 38th to 25th on a national ranking basis. The funding for SF277 resulted in some significant increases in teacher pay for FY2008 and 2009. Since these increases are intended to increase teacher pay to a targeted level, the percentage increases observed for FY2008 and 2009 are not expected to continue in future years. Since the salary experience observed in those years is not indicative of long-term rates of increase, we excluded them from our analysis in developing the salary increase assumption for School members.

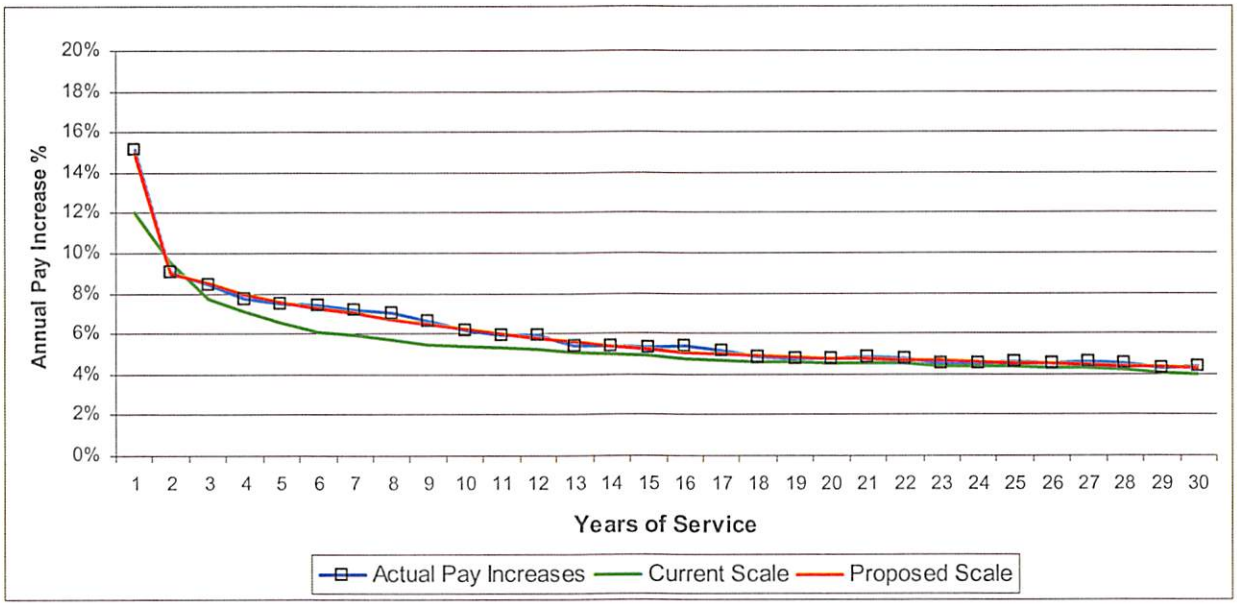
Since salary experience is closely tied to the economy, a longer study period is needed before any dramatic changes are considered. When the actual experience for the last four studies is averaged, the actual experience has been slightly lower than that expected, as shown below:

	Average Increase in Salaries					
	Actual					
Years of Service	2005-09	2001-05	1998-01	1993-98	Average	Expected
≤ 1	20.0%	15.6%	17.1%	14.3%	16.8%	15.2%
2	10.2%	7.9%	8.4%	8.9%	8.9%	9.6%
3	8.7%	6.5%	7.5%	7.2%	7.5%	7.9%
4-5	7.2%	6.0%	6.9%	6.5%	6.7%	7.0%
6-7	6.6%	5.6%	6.2%	5.6%	6.0%	6.3%
8-10	6.6%	5.1%	5.6%	5.2%	5.6%	5.8%
11-15	5.8%	4.7%	5.0%	4.7%	5.1%	5.2%
16-20	5.3%	4.2%	4.4%	4.2%	4.5%	4.7%
21+	4.4%	4.0%	4.1%	3.6%	4.0%	4.2%

As with the other demographic assumptions, salary experience during the investigative period was also analyzed by group. The results, including prior studies, if available, are shown below:

Years of Service	State – Salary Increases				
	2005-09	2001-05	1998-01	Average	Expected
≤ 1	15.1%	11.1%	18.2%	14.8%	15.2%
2	9.0%	7.9%	8.8%	8.6%	9.6%
3	8.5%	8.8%	8.8%	8.7%	7.9%
4-5	7.6%	7.3%	7.9%	7.6%	7.0%
6-7	7.3%	5.4%	7.1%	6.6%	6.3%
8-10	6.6%	6.2%	6.0%	6.3%	5.8%
11-15	5.6%	5.5%	5.4%	5.5%	5.2%
16-20	5.0%	4.8%	5.1%	5.0%	4.7%
21+	4.5%	4.8%	4.9%	4.7%	4.2%

Overall, the proposed salary scale is slightly higher than the current assumption (6.0% vs. 5.5%), as show below:

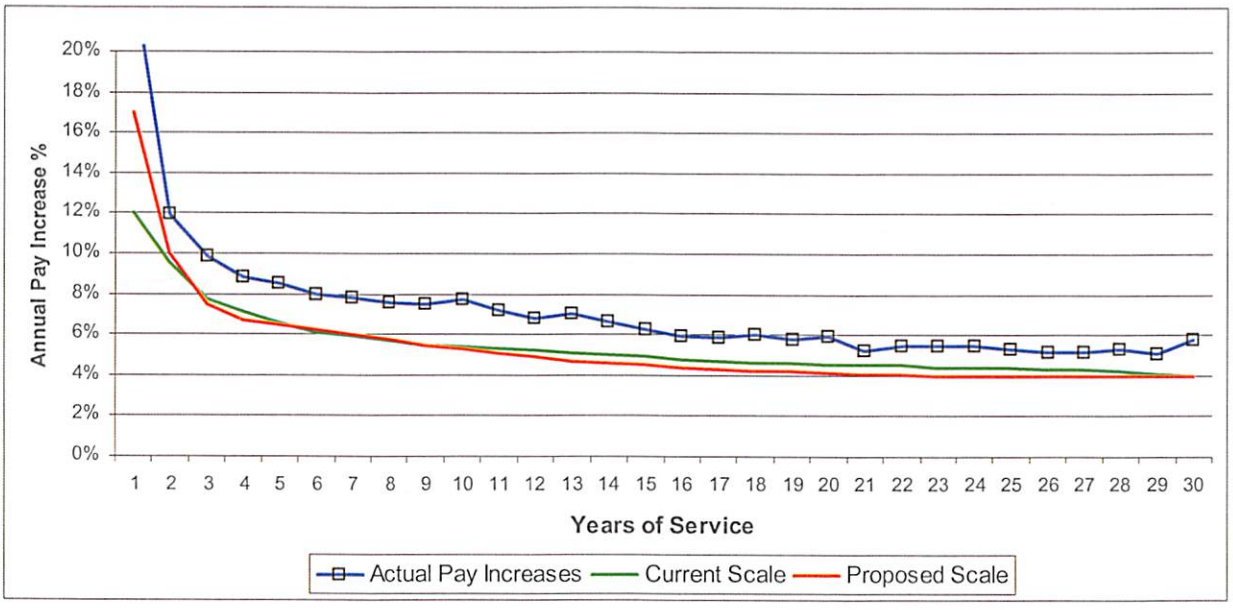


We did not believe the salary experience for the School group was representative of long-term increases in future salaries so the 2005-09 experience was not completely included in the experience used to develop the recommended assumption. We were able to use this experience in helping to set the relative increases by duration, but not for setting the overall expected increases.

Years of Service	School – Salary Increases				
	2005-09*	2001-05	1998-01	Average (1998-05)	Expected
≤ 1	23.3%	19.4%	16.1%	17.8%	15.2%
2	11.9%	8.3%	8.6%	8.5%	9.6%
3	9.8%	6.5%	7.2%	6.9%	7.9%
4-5	8.7%	6.0%	6.8%	6.4%	7.0%
6-7	7.9%	5.6%	6.2%	5.9%	6.3%
8-10	7.6%	5.2%	5.5%	5.4%	5.8%
11-15	6.8%	4.5%	4.8%	4.6%	5.2%
16-20	5.9%	4.0%	4.1%	4.1%	4.7%
21+	5.5%	3.8%	3.6%	3.7%	4.2%

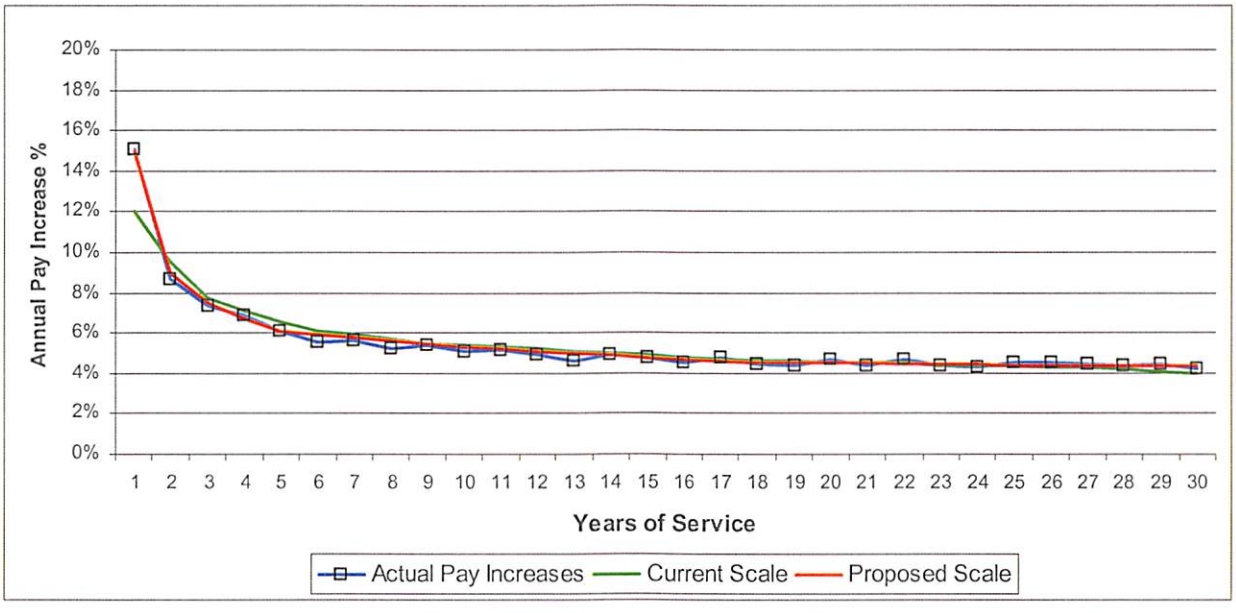
* Not included completely in developing proposed assumption.

The proposed assumption produces an overall salary increase of 5.6%, the same as the current overall assumption. The proposed rates do vary from the current assumption at all duration as shown below:



Years of Service	Other – Salary Increases				
	2005-09	2001-05	1998-01	Average	Expected
≤ 1	15.1%	14.6%	18.6%	16.1%	15.2%
2	8.7%	7.6%	8.7%	8.3%	9.6%
3	7.3%	6.3%	7.8%	7.1%	7.9%
4-5	6.5%	5.7%	7.0%	6.4%	7.0%
6-7	5.6%	5.1%	6.1%	5.6%	6.3%
8-10	5.2%	4.9%	5.8%	5.3%	5.8%
11-15	4.9%	4.6%	5.7%	5.1%	5.2%
16-20	4.6%	4.0%	5.3%	4.6%	4.7%
21+	4.4%	3.8%	5.0%	4.4%	4.2%
Total					

The overall increase for the proposed assumption of 6.0% is about the same as the current assumption of 5.9%, but modest changes were made at nearly all durations as shown below:



Special Services Groups

Separate analysis was done for the Special Services groups. Actual salary increases were slightly higher than expected (6.2% vs. 5.8% for the entire period). In the prior study, actual salary increases were slightly lower than expected (5.5% vs. 5.9%).

	Salary Increases	
Fiscal Year	Actual	Expected
2006	7.1%	5.8%
2007	5.9%	5.8%
2008	6.6%	5.8%
2009	5.5%	5.9%
2006-09	6.2%	5.8%

Salary experience is impacted by economic cycles and four years is a relatively short observation period. Therefore, we recommend aggregating the experience in the current and prior study. On that basis the current assumption is a relatively good fit. We recommend the rates at durations less than five be increased slightly and the remaining rates remain unchanged.

We recommend that the salary increase assumptions described here and detailed in Appendices B and H be adopted.

Section 12

Other Topics

There were two special projects that IPERS asked to be included in the experience study report:
(1) retired/re-employed group and
(2) licensed health care professionals.

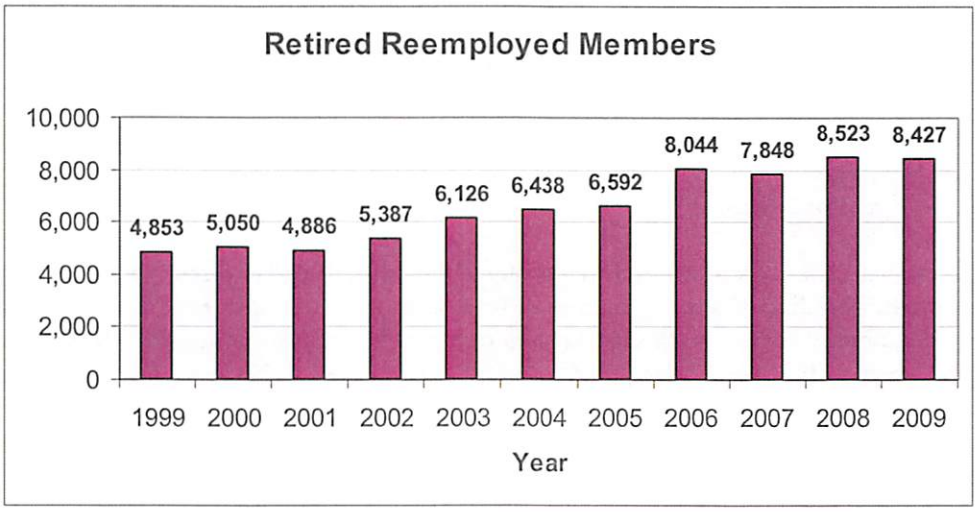
The interest in reviewing the retired/re-employed group is the result of earlier discussions regarding the impact on the System's funding of rehiring retirees instead of hiring new employees. Legislation passed in 2006 provided a temporary window for licensed health care professionals to retire with IPERS benefits and return to work in one month. IPERS is required to report back to the legislature on the cost impact of the law.

Retired/Re-employed Group

In general, the cost of providing monthly income in a defined benefit plan increases with entry age of the member. Even though the benefit amount may be lower due to short service, there is a shorter period of time over which to spread the costs and for contributions to accumulate before the payout period begins. In IPERS if a retired member returns to covered employment, they earn a second benefit based on the years of service and salary that occurred in the second employment period. By virtue of entering the System after retirement, this group is much older than a typical new hire.

For valuation purposes, IPERS identifies the retired re-employed members. This status is used for those members who have retired, and then have subsequently returned to employment, but not yet used the new wages to obtain an additional benefit. In the June 30, 2009 valuation, about 85% of the retired re-employed members had current wages, while the remaining 15% are considered inactive by IPERS. Of the 8,427 retired re-employed members valued in the 2009 valuation, 80% had earnings of less than $15,000, while 95% had earnings of less than $30,000. The total actuarial liability for the retired re-employed group is $44 million out of a total of $24,733 million.

The data in the June 30, 2009 actuarial valuation indicates that the average entry age of the members in the retired/re-employed group is 64.2 and the average entry age of all other members is 34.4. With the Entry Age Normal cost method, the normal cost rate increases with entry age. The provision for a retired member to return to work has been in the law for many years. The concern at this time is the cost impact due to the number of such members, which has been increasing in recent years. IPERS identifies these members in the valuation data and the count of such members in past valuations is shown below:



Based on the June 30, 2009 actuarial valuation, the normal cost rate for the retired/re-employed members in the regular membership group was 14.65% and the normal cost rate for all other employees was 9.91%. The normal cost rate for the entire regular membership group is 9.97% so the cost of providing benefits to the retired/re-employed members increased the overall cost for the group.

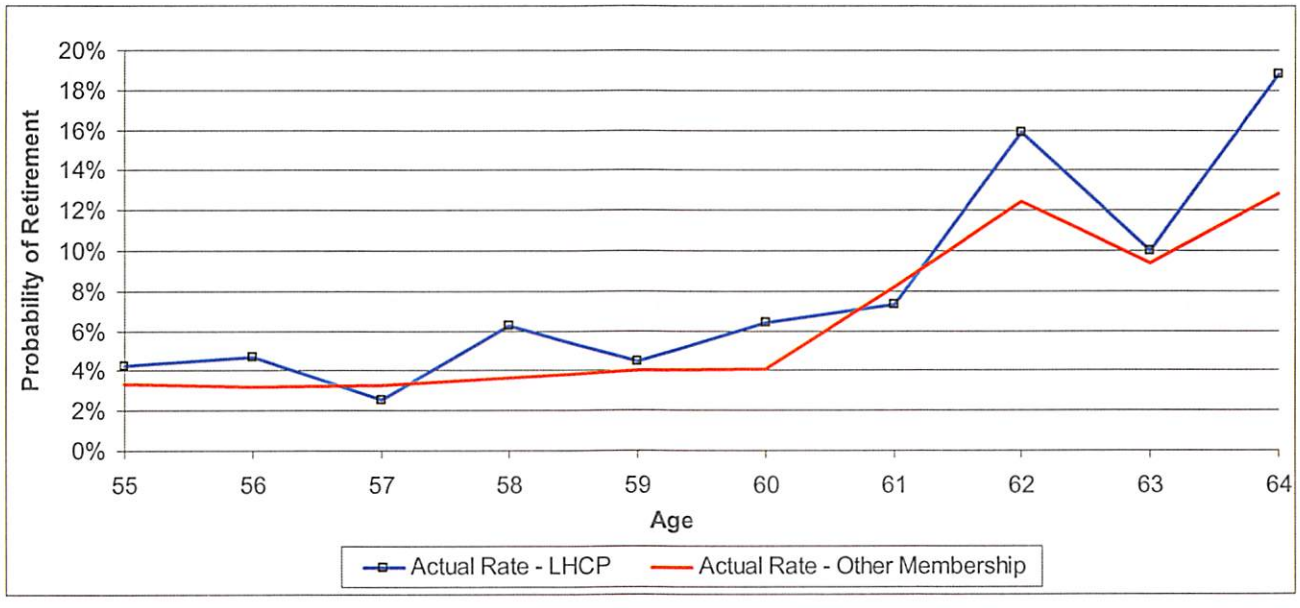
Licensed Health Care Professionals

The standard requirement for a bona fide retirement for IPERS is four months. However, an exception in the law permits licensed health care professionals (LHCPs) to retire with IPERS benefits and return to work in one month. This provision is due to expire July 1, 2011.

We were able to examine the retirement patterns for licensed health care professionals (LHCPs) during the study period. Prior to the enactment of the law, these members had not been separately identified by the employers in the data submitted to IPERS and thus to the actuary. Consequently, it is not possible to compare the retirement patterns following the passage of the law to the behavior that occurred before then.

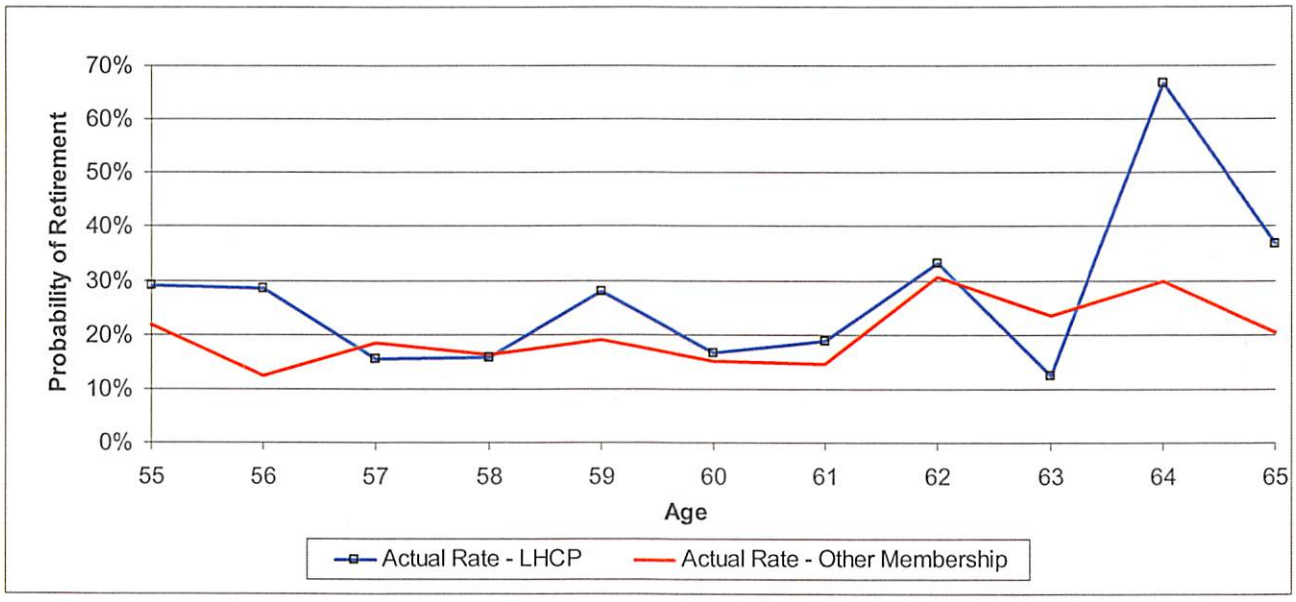
Since most of the LHCPs are in the Other membership group, we compared the recent retirement patterns of the LHCPs to those observed for the total Other membership. In general, the LHCPs retired earlier than the overall group. For example, the retirement age during this period for the LHCPs was 60.6 compared to 63.7 for members in the Other group. To the extent that this earlier retirement was motivated by the new provisions relating to LHCPs, we expect that costs would have been higher. However, as noted earlier, we are not able to determine if this retirement pattern is the result of the legislation or would have occurred anyway. Specific experience results for early, select (first eligible for unreduced benefits) and ultimate retirement are shown below.

Early Retirement



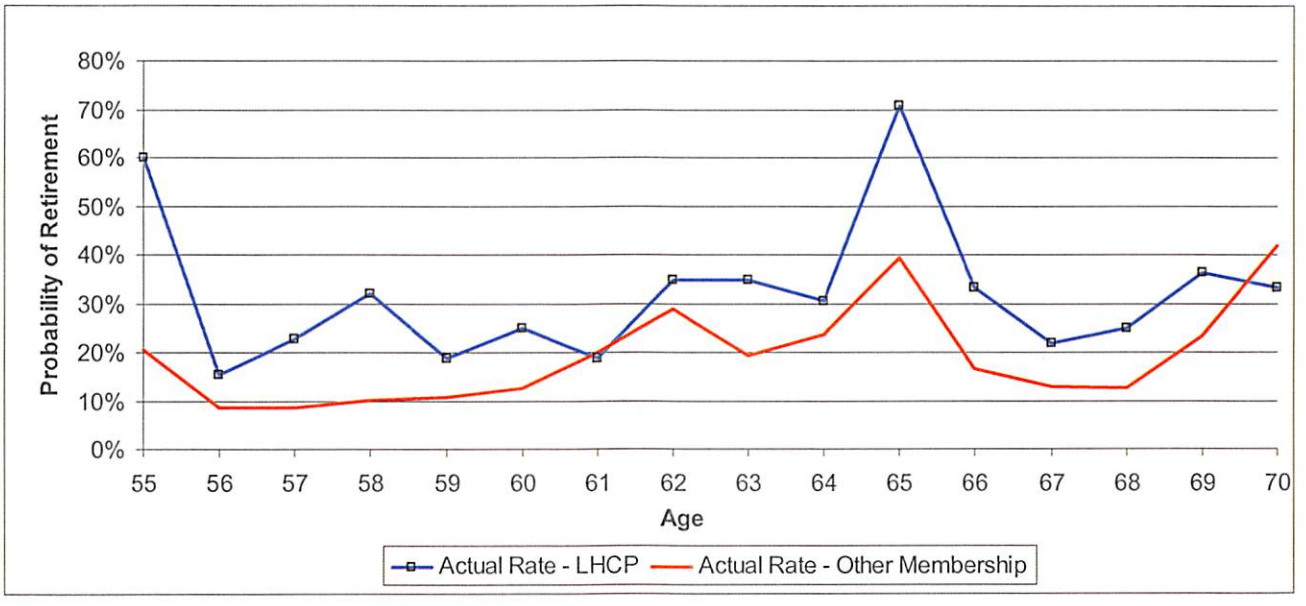
	Exposure	Actual	Expected	A/E
LHCP	2,697	156	210	74%
Other	39,886	2,033	3,489	58%

Select Retirement



	Exposure	Actual	Expected	A/E
LHCP	220	62	58	107%
Other	3,633	729	1,029	71%

Ultimate Retirement



	Exposure	Actual	Expected	A/E
LHCP	307	118	106	111%
Other	10,938	2,122	3,266	65%

In addition to the influence the legislation may have had on retirement rates, the frequency of retirees returning to employment was also studied. IPERS collected data on these members which indicates that for Regular members, the number of retirees returning to employment represent 15.9% of retirees during the period of July 1, 2004 to July 1, 2009. (Note that because of time lags, this does not necessarily mean that 15.9% of retirees return to work.) During the same period, rehired LHCPs reflected 23.6% of LHCP retirements. This 23.6% consists of 16.9% who were retired less than four months plus 6.7% who were retired longer than four months. Once again, we cannot determine what percentage of these members would have returned to work in the absence of the special provision in law, but the disparity in experience suggests that some members were likely motivated to retire and return. A final indication that the law may be motivating retirements is that the average earnings in the June 30, 2009 valuation of the LHCP retired re-employed members was $19,963 compared to $9,812 for all other retired re-employed members.

The data observed has been reported here, but it has limited value because we don't know whether or not the changes in retirement patterns resulted from the change in the law. While the data suggests that the provision was significantly utilized, there is no way to know whether it encouraged people to retire sooner, or if it simply allowed those who were already planning to retire and then return to work to simply accelerate their rehire date. Most likely, some individuals accelerated retirement, thereby increasing costs. Further, some individuals may have been encouraged to return to employment rather than going to work for a private employer, which would also have increased costs as described in the previous section on retired re-employed members. Unfortunately, that cost impact cannot be effectively quantified with the available data.

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EXHIBITS

Exhibit 1

U.S. Consumer Price Index

December of:	Index	Increase	December of:	Inde	Increas
1928	17.1				
1929	17.2	0.6 %	1969	37.7	6.2%
1930	16.1	-6.4	1970	39.8	5.6
1931	14.6	-9.3	1971	41.1	3.3
1932	13.1	-10.3	1972	42.5	3.4
1933	13.2	0.8	1973	46.2	8.7
1934	13.4	1.5	1974	51.9	12.3
1935	13.8	3.0	1975	55.5	6.9
1936	14.0	1.4	1976	58.2	4.9
1937	14.4	2.9	1977	62.1	6.7
1938	14.0	-2.8	1978	67.7	9.0
1939	14.0	0.0	1979	76.7	13.3
1940	14.1	0.7	1980	86.3	12.5
1941	15.5	9.9	1981	94.0	8.9
1942	16.9	9.0	1982	97.6	3.8
1943	17.4	3.0	1983	101.3	3.8
1944	17.8	2.3	1984	105.3	3.9
1945	18.2	2.2	1985	109.3	3.8
1946	21.5	18.1	1986	110.5	1.1
1947	23.4	8.8	1987	115.4	4.4
1948	24.1	3.0	1988	120.5	4.4
1949	23.6	-2.1	1989	126.1	4.6
1950	25.0	5.9	1990	133.8	6.1
1951	26.5	6.0	1991	137.9	3.1
1952	26.7	0.8	1992	141.9	2.9
1953	26.9	0.7	1993	145.8	2.7
1954	26.7	-0.7	1994	149.7	2.7
1955	26.8	0.4	1995	153.5	2.5
1956	27.6	3.0	1996	158.6	3.3
1957	28.4	2.9	1997	161.3	1.7
1958	28.9	1.8	1998	163.9	1.6
1959	29.4	1.7	1999	168.3	2.7
1960	29.8	1.4	2000	174.0	3.4
1961	30.0	0.7	2001	176.7	1.6
1962	30.4	1.3	2002	180.9	2.4
1963	30.9	1.6	2003	184.3	1.9
1964	31.2	1.0	2004	190.3	3.3
1965	31.8	1.9	2005	196.8	3.4
1966	32.9	3.5	2006	201.8	2.5
1967	33.9	3.0	2007	210.0	4.1
1968	35.5	4.7	2008	210.2	0.1
			2009	215.9	2.7

Exhibit 2

National Average Wage Index

	Index	Increase		Inde	Increas
1927	$1,159.14				
1928	1,162.53	0.3%	1968	$5,571.76	6.9%
1929	1,196.88	3.0	1969	5,893.76	5.8
1930	1,164.95	(2.7)	1970	6,186.24	5.0
1931	1,086.09	(6.8)	1971	6,497.08	5.0
1932	954.02	(12.2)	1972	7,133.80	9.8
1933	892.58	(6.4)	1973	7,580.16	6.3
1934	929.34	4.1	1974	8,030.76	5.9
1935	968.53	4.2	1975	8,630.92	7.5
1936	1,008.20	4.1	1976	9,226.48	6.9
1937	1,071.58	6.3	1977	9,779.44	6.0
1938	1,047.39	(2.3)	1978	10,556.03	7.9
1939	1,076.41	2.8	1979	11,479.46	8.7
1940	1,106.41	2.8	1980	12,513.46	9.0
1941	1,228.81	11.1	1981	13,773.10	10.1
1942	1,455.70	18.5	1982	14,531.34	5.5
1943	1,661.79	14.2	1983	15,239.24	4.9
1944	1,796.28	8.1	1984	16,135.07	5.9
1945	1,865.46	3.9	1985	16,822.51	4.3
1946	2,009.14	7.7	1986	17,321.82	3.0
1947	2,205.08	9.8	1987	18,426.51	6.4
1948	2,370.53	7.5	1988	19,334.04	4.9
1949	2,430.52	2.5	1989	20,099.55	4.0
1950	2,570.33	5.8	1990	21,027.98	4.6
1951	2,799.16	8.9	1991	21,811.60	3.7
1952	2,973.32	6.2	1992	22,935.42	5.2
1953	3,139.44	5.6	1993	23,132.67	0.9
1954	3,155.64	0.5	1994	23,753.53	2.7
1955	3,301.44	4.6	1995	24,705.66	4.0
1956	3,532.36	7.0	1996	25,913.90	4.9
1957	3,641.72	3.1	1997	27,426.00	5.8
1958	3,673.80	0.9	1998	28,861.44	5.2
1959	3,855.80	5.0	1999	30,469.84	5.6
1960	4,007.12	3.9	2000	32,154.82	5.5
1961	4,086.76	2.0	2001	32,921.92	2.4
1962	4,291.40	5.0	2002	33,252.09	1.0
1963	4,396.64	2.5	2003	34,064.95	2.4
1964	4,576.32	4.1	2004	35,648.55	4.6
1965	4,658.72	1.8	2005	36,952.94	3.7
1966	4,938.36	6.0	2006	38,651.41	4.6
1967	5,213.44	5.6	2007	40,405.48	4.5
			2008	41,334.97	2.3

Exhibit 3

Annual Rates of Price and Wage Inflation

Plan Year Ends	National Wage Index	National Price CPI Index	National Implied Productivity Increase
1985	4.3%	3.8%	0.5%
1986	3.0%	1.1%	1.8%
1987	6.4%	4.4%	2.0%
1988	4.9%	4.4%	0.5%
1989	4.0%	4.6%	-0.7%
1990	4.6%	6.1%	-1.5%
1991	3.7%	3.1%	0.7%
1992	5.2%	2.9%	2.3%
1993	0.9%	2.7%	-1.9%
1994	2.7%	2.7%	0.0%
1995	4.0%	2.5%	1.5%
1996	4.0%	3.3%	1.6%
1997	5.8%	1.7%	4.1%
1998	5.2%	1.6%	3.6%
1999	5.6%	2.7%	2.9%
2000	5.5%	3.4%	2.1%
2001	2.4%	1.5%	0.8%
2002	1.0%	2.4%	-1.4%
2003	2.4%	1.9%	0.6%
2004	4.6%	3.3%	1.4%
2005	3.7%	3.4%	0.3%
2006	4.6%	2.5%	2.1%
2007	4.5%	4.1%	0.4%
2008	2.3%	0.1%	2.2%
Geometric Averages			
5-year period			
1988 – 1993	3.7%	3.5%	0.2%
1993 – 1998	4.5%	2.4%	2.1%
1998 – 2003	3.4%	2.4%	1.0%
2003 – 2008	3.9%	2.7%	1.2%
10-year period			
1988 – 1998	4.1%	3.1%	1.0%
1998 – 2008	3.7%	2.5%	1.2%
15-year period			
1993 – 2008	3.9%	2.5%	1.4%

APPENDICES

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APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

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APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

ECONOMIC ASSUMPTIONS:

Rate of Inflation (effective June 30, 2006)

3.25% per annum

Rate of Crediting Interest on Contribution Balances (effective June 30, 2006)

4.00% per annum, compounded annually

Rate of Investment Return (effective June 30, 1996)

7.50% per annum, compounded annually, net of expenses.

Wage Growth Assumption (effective June 30, 1999)*

4.00% per annum based on 3.25% inflation assumption and 0.75% real wage inflation.

*Total of 4.0% did not change but the components changed June 30, 2006

Payroll Increase Assumption (effective June 30, 1999)

4.00% per year

DEMOGRAPHIC ASSUMPTIONS:

Rates of Mortality (effective June 30, 2002)

		Regular Membership	Special Services
Males:	Retirees:	RP-2000 Healthy Annuitant Table, Set Forward One Year	RP-2000 Healthy Annuitant Table Set Forward Three Years
	Actives:	RP-2000 Employee Table, Set Forward One Year	RP-2000 Employee Table Set Forward Three Years
Females:	Retirees:	RP-2000 Healthy Annuitant Table, Set Back Two Years	RP-2000 Healthy Annuitant Table No Age Adjustment
	Actives:	RP-2000 Employee Table, Set Back Two Years	RP-2000 Employee Table No Age Adjustment
	The RP-2000 Tables are used with generational mortality		
Beneficiaries:	Same as members		Same as members
Disabled Members:	Annual rates are the greater of 3% or 2.5% plus the corresponding non-disabled rate (based on GAM 94 for males, 95% of GAM 94 for females)		Same as healthy members set forward 6 years

For Special Services active members, 5% of deaths are assumed to be service related.

Retirement Rates (effective June 30, 2002)

Upon meeting the requirements for early retirement, the following rates apply to regular members:

Age	Assumed Retirement Rate
55-59	5%
60	10
61	15
62	25
63-64	20

Upon reaching the requirements for normal retirement, the following rates apply:

	Assumed Retirement Rates		
Age	1st Year Eligible	After 1st Year	Special Services
55	20%	10%	15%
56	20%	10%	10%
57-59	20%	20%	10%
60	25%	25%	10%
61	35%	30%	20%
62	50%	40%	35%
63	35%	30%	20%
64	35%	35%	35%
65	30%	45%	100%
66	20%	20%	100%
67-68	15%	15%	100%
69	15%	35%	100%
70+	100%	100%	100%

Special Services Group 1 ages 50 to 55 with 22 years of service effective: 30%

Terminated vested members are assumed to retire at age 62 (55 for Special Services).
For regular membership, retired re-employed members are assumed to retire at a rate of 25% per year until age 80 when all are assumed to retire.

Rates of Disablement (effective June 30, 1999 for Regular Membership), (effective June 30, 2006 for Special Services)

	Annual Rate Per 1,000 Members		
Age	Males	Females	Special Services
27	0.2	0.2	1.1
32	0.2	0.2	1.2
37	0.4	0.3	1.8
42	0.7	0.5	3.5
47	1.4	0.9	6.5
52	3.3	2.2	14.6
57	6.3	3.9	26.0
62	9.0	6.2	48.7

Rates of Termination of Employment (effective June 30, 2002)

Regular Membership

	Annual Rate of Withdrawals Per 1,000 Members					
Males:						
Age	**Years 0-1**	**Year 2**	**Year 3**	**Years 4-6**	**Years 7-8**	**Years 9+**
22	330.0	250.0	165.0	165.0	110.0	66.0
27	231.0	145.0	121.0	99.0	88.0	66.0
32	198.0	145.0	110.0	74.8	55.0	38.5
37	195.8	140.0	110.0	74.8	49.5	33.0
42	195.8	140.0	110.0	74.8	49.5	25.3
47	195.8	130.0	99.0	74.8	49.5	19.8
52	176.0	110.0	77.0	74.8	49.5	19.8
55+	165.0	110.0	55.0	74.8	49.5	19.8
Females:						
Age	**Years 0-1**	**Year 2**	**Year 3**	**Years 4-6**	**Years 7-8**	**Years 9+**
22	330.0	250.0	220.0	220.0	165.0	55.0
27	275.0	170.0	140.0	110.0	99.0	55.0
32	247.5	170.0	140.0	104.5	71.5	49.5
37	198.0	150.0	110.0	104.5	66.0	36.3
42	198.0	150.0	110.0	88.0	60.5	30.8
47	198.0	130.0	110.0	82.5	49.5	25.3
52	198.0	130.0	110.0	82.5	49.5	25.3
55+	198.0	130.0	110.0	82.5	49.5	25.3

Special Services

Age	Annual Rate of Withdrawals Per 1,000 Members
22	90
27	70
32	35
37	35
42	35
47	35
52	30

Probability of Electing a Deferred Vested Benefit (effective June 30, 2002)

Years of Service	Regular Membership		Special Services
	Males	Females	
5	61%	70%	53%
10	66%	73%	65%
15	71%	80%	85%
20	76%	85%	95%
25	80%	90%	100%
30	80%	90%	100%

Rates of Salary Increase* (effective June 30, 2006)

Years of Service	Annual Increase	Years of Service	Annual Increase	Years of Service	Annual Increase
		11	5.3%	22	4.5%
Under 2	12.0%	12	5.2%	23	4.4%
2	9.5%	13	5.1%	24	4.4%
3	7.7%	14	5.0%	25	4.4%
4	7.1%	15	4.9%	26	4.3%
5	6.6%	16	4.8%	27	4.3%
6	6.1%	17	4.7%	28	4.2%
7	5.9%	18	4.6%	29	4.1%
8	5.7%	19	4.6%	30	4.0%
9	5.5%	20	4.5%	Over 30	4.0%
10	5.4%	21	4.5%		

*Includes 4.0% wage growth.

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

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APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

ECONOMIC ASSUMPTIONS:

Rate of Inflation (effective June 30, 2006)

3.25% per annum

Rate of Crediting Interest on Contribution Balances (effective June 30, 2006)

4.00% per annum, compounded annually

Rate of Investment Return (effective June 30, 1996)

7.50% per annum, compounded annually, net of expenses.

*Wage Growth Assumption (effective June 30, 1999)**

4.00% per annum based on 3.25% inflation assumption and 0.75% real wage inflation.

*Total of 4.0% did not change but the components changed June 30, 2006

Payroll Increase Assumption (effective June 30, 1999)

4.00% per year

DEMOGRAPHIC ASSUMPTIONS:

Rates of Mortality (effective June 30, 2010)

Pre-Retirement

State	
Male	RP2000 Employee Table, Generational, set back 3 years
Female	RP2000 Employee Table, Generational, set back 8 years
School	
Male	RP2000 Employee Table, Generational, set back 3 years
Female	RP2000 Employee Table, Generational, set back 8 years
Other	
Male	RP2000 Employee Table, Generational, no set back
Female	RP2000 Employee Table, Generational, set back 8 years
Special Services	
Male	RP2000 Healthy Annuitant Table, Generational
Female	RP2000 Healthy Annuitant Table, Generational

For Special Services active members, 5% of deaths are assumed to be service related.

Post-Retirement

State	RP2000 Healthy Annuitant, Generational
Male	No set back
Female	1 Year set forward with 70% decrease below 75 and 10% decrease above 75
School	RP2000 Healthy Annuitant, Generational
Male	2 Year set back with 10% decrease below 75 and 10% increase above 75
Female	3 Year set back with 25% decrease below 75 and 10% increase above 75
Other	RP2000 Healthy Annuitant, Generational
Male	No set forward or set back
Female	3 Year set back with 10% decrease below 75 and 15% increase above 75
Special Services	RP2000 Healthy Annuitant Table, Generational
Male	No age adjustment
Female	No age adjustment
Beneficiaries:	Same as members
Disabled Members (all groups):	RP2000 Disabled Mortality, Generational Set back 1 year for males and set forward 3 years for females

Retirement Rates (effective June 30, 2010)

Upon meeting the requirements for early retirement, the following rates apply to regular members:

	Assumed Retirement Rates – Early		
Age	State	School	Other
55	5.0%	8.0%	5.0%
56	5.0%	8.0%	5.0%
57	5.0%	8.0%	5.0%
58	5.0%	8.0%	5.0%
59	5.0%	9.0%	5.0%
60	5.0%	10.0%	5.0%
61	15.0%	15.0%	10.0%
62	15.0%	20.0%	20.0%
63	15.0%	20.0%	20.0%
64	15.0%	20.0%	20.0%

Upon reaching the requirements for normal retirement (unreduced benefits), the following rates apply:

	Assumed Retirement Rates – Select Unreduced		
Age	State	School	Other
55	20.0%	30.0%	20.0%
56	15.0%	30.0%	20.0%
57	15.0%	30.0%	20.0%
58	15.0%	30.0%	20.0%
59	15.0%	30.0%	20.0%
60	15.0%	30.0%	20.0%
61	20.0%	30.0%	20.0%
62	40.0%	40.0%	40.0%
63	35.0%	30.0%	35.0%
64	30.0%	30.0%	35.0%
65	30.0%	30.0%	30.0%

	Assumed Retirement Rates – Ultimate Unreduced		
Age	State	School	Other
55	15.0%	23.0%	15.0%
56	15.0%	23.0%	15.0%
57	15.0%	23.0%	15.0%
58	15.0%	23.0%	15.0%
59	15.0%	23.0%	15.0%
60	15.0%	23.0%	15.0%
61	20.0%	30.0%	20.0%
62	40.0%	35.0%	35.0%
63	30.0%	30.0%	25.0%
64	30.0%	30.0%	25.0%
65	30.0%	45.0%	40.0%
66	30.0%	35.0%	30.0%
67	20.0%	25.0%	20.0%
68	20.0%	25.0%	20.0%
69	35.0%	40.0%	40.0%
70	100.0%	100.0%	100.0%

	Assumed Retirement Rates	
Age	SS1	SS2
50	20.0%	
51	20.0%	
52	20.0%	
53	20.0%	
54	20.0%	
55	25.0%	20.0%
56	20.0%	10.0%
57	20.0%	10.0%
58	20.0%	10.0%
59	20.0%	10.0%
60	20.0%	10.0%
61	20.0%	10.0%
62	35.0%	35.0%
63	50.0%	30.0%
64	50.0%	30.0%
65	100.0%	100.0%

Terminated vested members are assumed to retire at age 62 (55 for Special Services).
For regular membership, retired re-employed members are assumed to retire at a rate of 25% per year until age 80 when all are assumed to retire.

Rates of Disablement (effective June 30, 2010)

	Assumed Rates					
	Males			Females		
Age	State	School	Other	State	School	Other
27	0.020%	0.020%	0.020%	0.020%	0.030%	0.020%
32	0.020%	0.020%	0.020%	0.020%	0.030%	0.020%
37	0.040%	0.040%	0.040%	0.032%	0.040%	0.032%
42	0.065%	0.065%	0.065%	0.051%	0.050%	0.051%
47	0.120%	0.110%	0.140%	0.087%	0.090%	0.087%
52	0.220%	0.160%	0.326%	0.220%	0.165%	0.200%
57	0.320%	0.260%	0.630%	0.390%	0.240%	0.350%
62	0.420%	0.360%	0.900%	0.620%	0.320%	0.500%

	Assumed Rates Special Services
Age	Rate
27	0.150%
32	0.150%
37	0.150%
42	0.180%
47	0.230%
52	0.280%
57	0.380%
62	0.510%

Rates of Termination of Employment (effective June 30, 2010)

Regular Membership

	Male			Female		
Years of Service	School State	State School	Other	State	School	Other
1	15.4%	15.9%	21.0%	15.4%	15.9%	21.0%
5	5.5%	6.9%	8.4%	5.5%	6.9%	9.2%
10	2.2%	2.9%	4.3%	2.2%	2.9%	5.8%
15	1.7%	1.8%	2.6%	1.7%	1.8%	4.1%
20	1.1%	1.3%	2.4%	1.1%	1.3%	3.2%
25	1.1%	1.2%	2.0%	1.1%	1.2%	2.4%
30	1.1%	1.2%	1.2%	1.1%	1.2%	1.5%

Special Services

Age	Rate of Termination
22	5.8%
27	5.8%
32	3.5%
37	3.0%
42	2.6%
47	2.0%
52	2.0%

Probability of Electing a Deferred Vested Benefit (effective June 30, 2010)

	Regular Membership					
	Male			Female		
Years of Service	State	School	Other	State	School	Other
5	66.0%	76.0%	61.0%	61.0%	80.0%	70.0%
10	73.0%	81.0%	66.0%	66.0%	80.0%	73.0%
15	78.0%	86.0%	71.0%	76.0%	85.0%	80.0%
20	83.0%	91.0%	76.0%	86.0%	90.0%	85.0%
25	88.0%	95.0%	80.0%	96.0%	95.0%	90.0%
30	90.0%	95.0%	80.0%	100.0%	100.0%	90.0%

	Special Services
Years of Service	Rate
5	53%
10	65%
15	85%
20	95%
25	100%
30	100%

Rates of Salary Increase (effective June 30, 2010)*

	Annual Increase			
Years of Service	State	School	Other	Special Services
1	15.0%	17.0%	15.0%	17.0%
5	7.6%	6.5%	6.1%	6.5%
10	6.3%	5.3%	5.3%	5.3%
15	5.2%	4.5%	4.8%	4.8%
20	4.8%	4.2%	4.5%	4.5%
25	4.6%	4.0%	4.4%	4.5%
30+	4.3%	4.0%	4.4%	4.0%

* Includes 4.0% wage growth

APPENDIX C

MORTALITY

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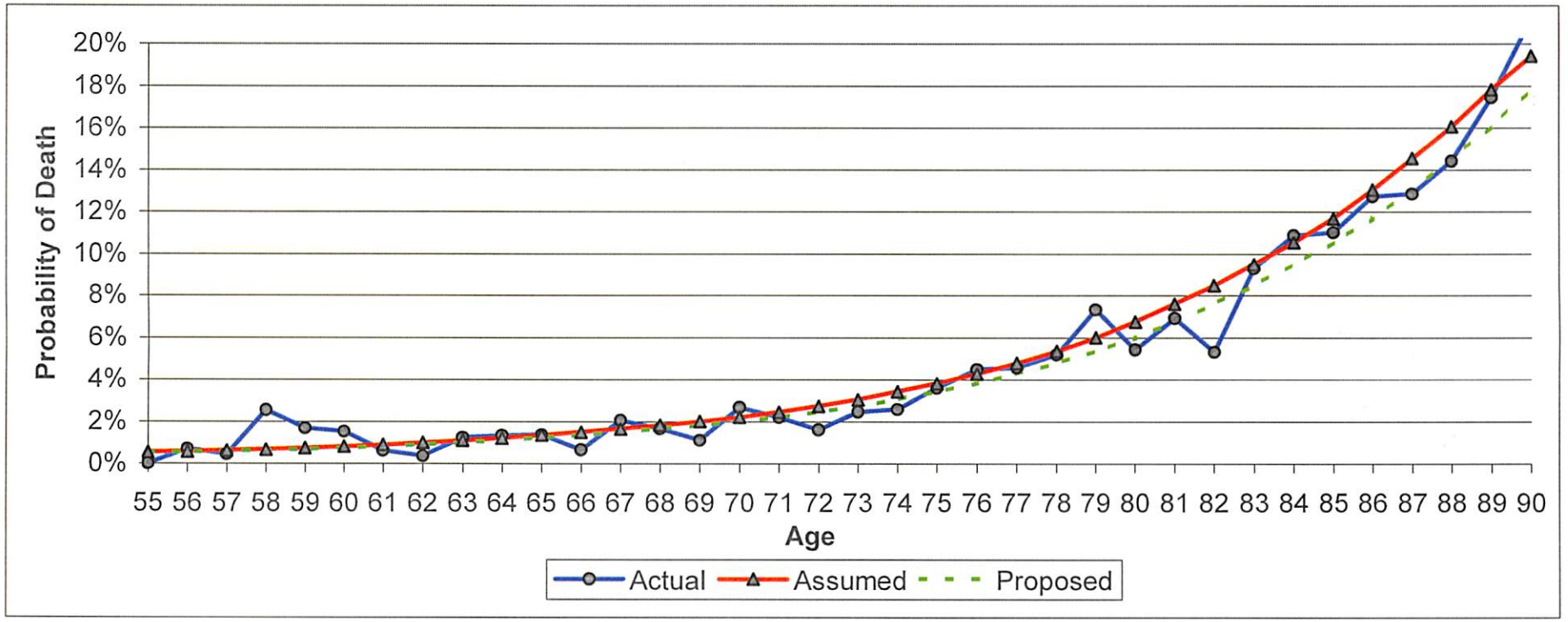
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-1

Probability of Death - Healthy Retirees

Males - State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	723	774	695
Actual/Expected		93%	104%

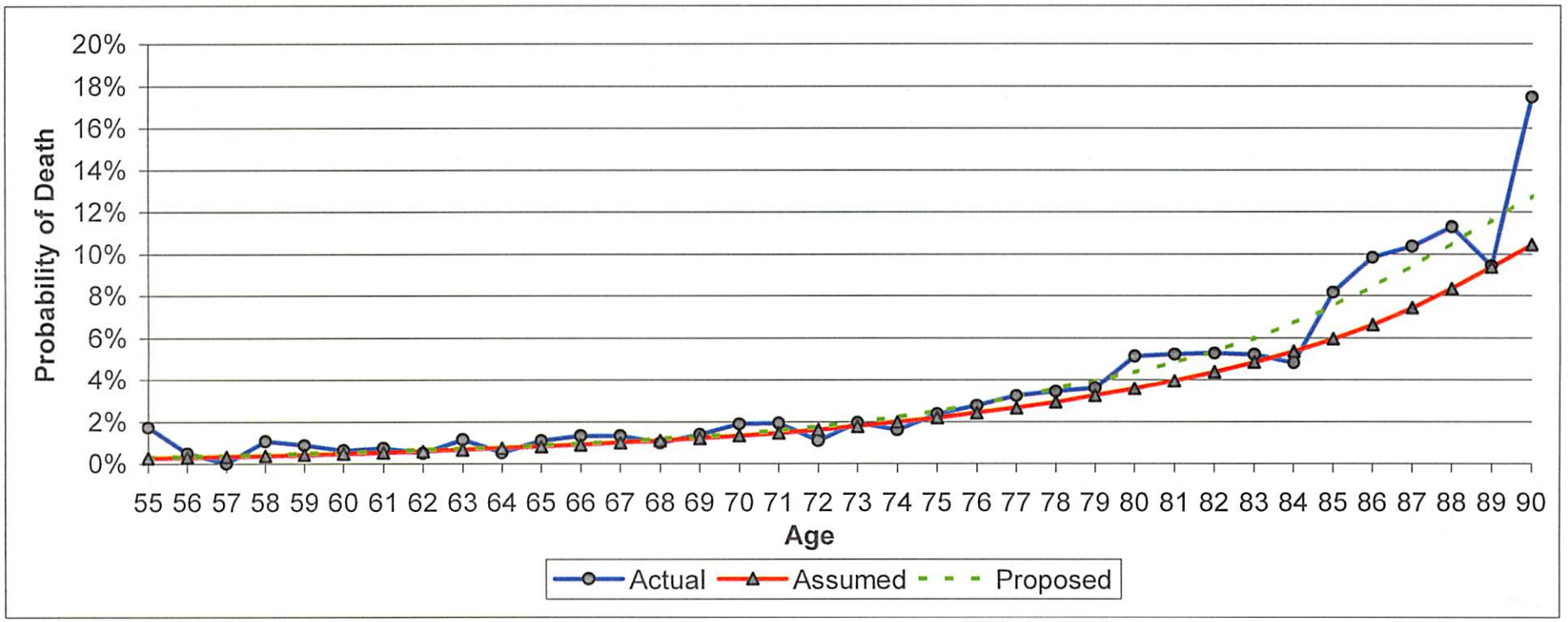
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-2

Probability of Death - Healthy Retirees

Females - State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	613	499	595
Actual/Expected		123%	103%

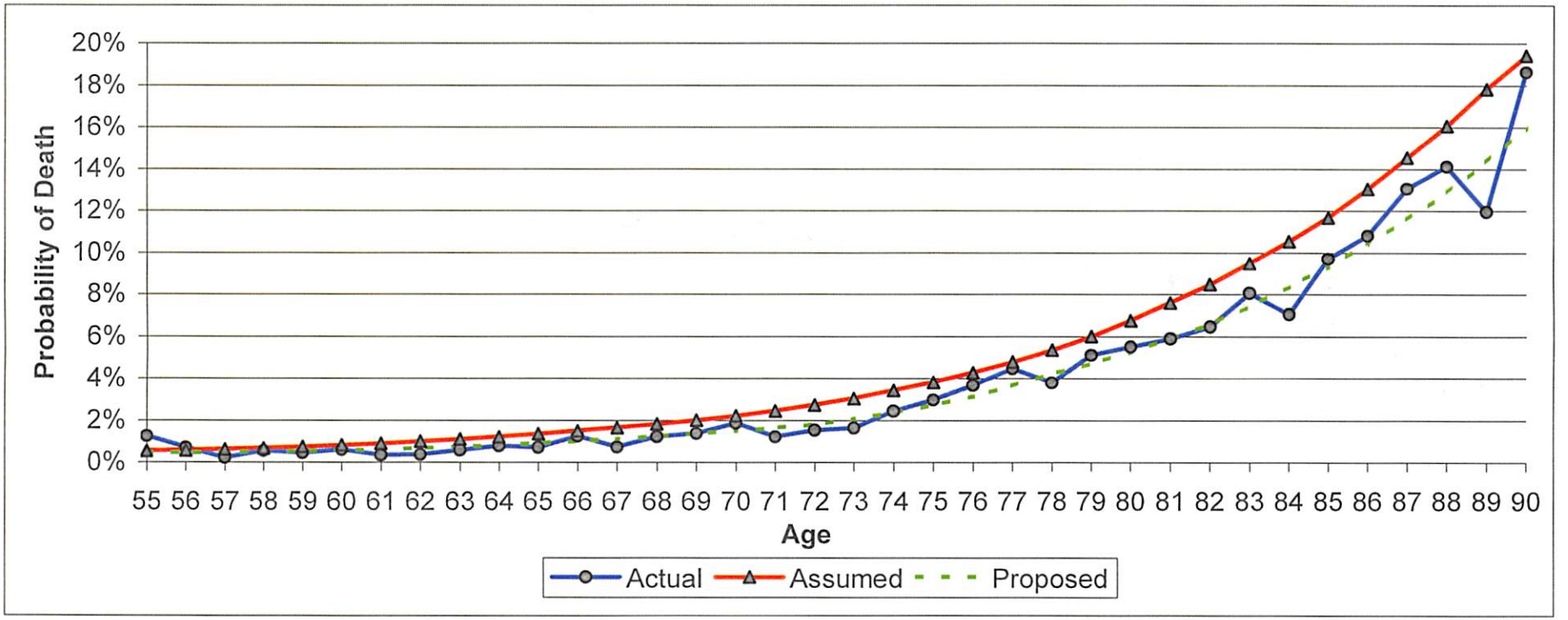
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-3

Probability of Death - Healthy Retirees

Males - School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	1,416	1,887	1,408
Actual/Expected		75%	101%

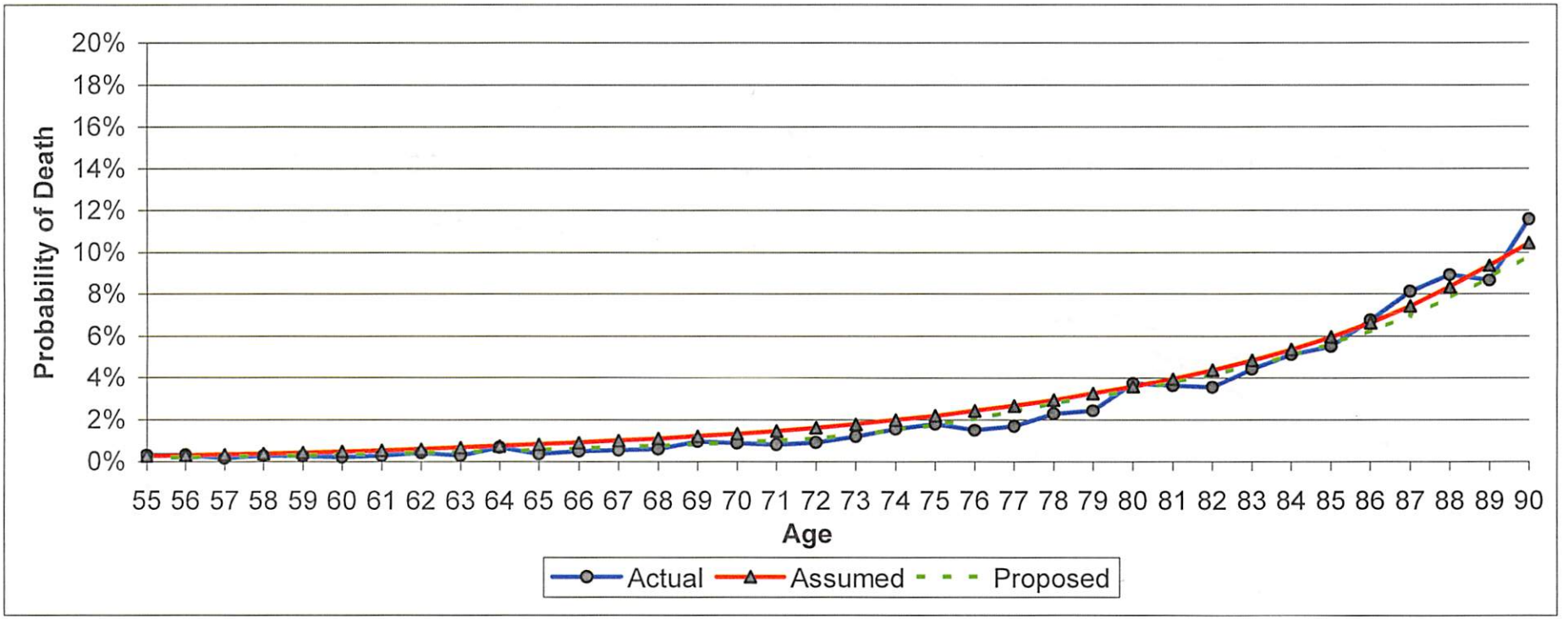
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-4

Probability of Death - Healthy Retirees

Females - School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	2,155	2,553	2,217
Actual/Expected		84%	97%

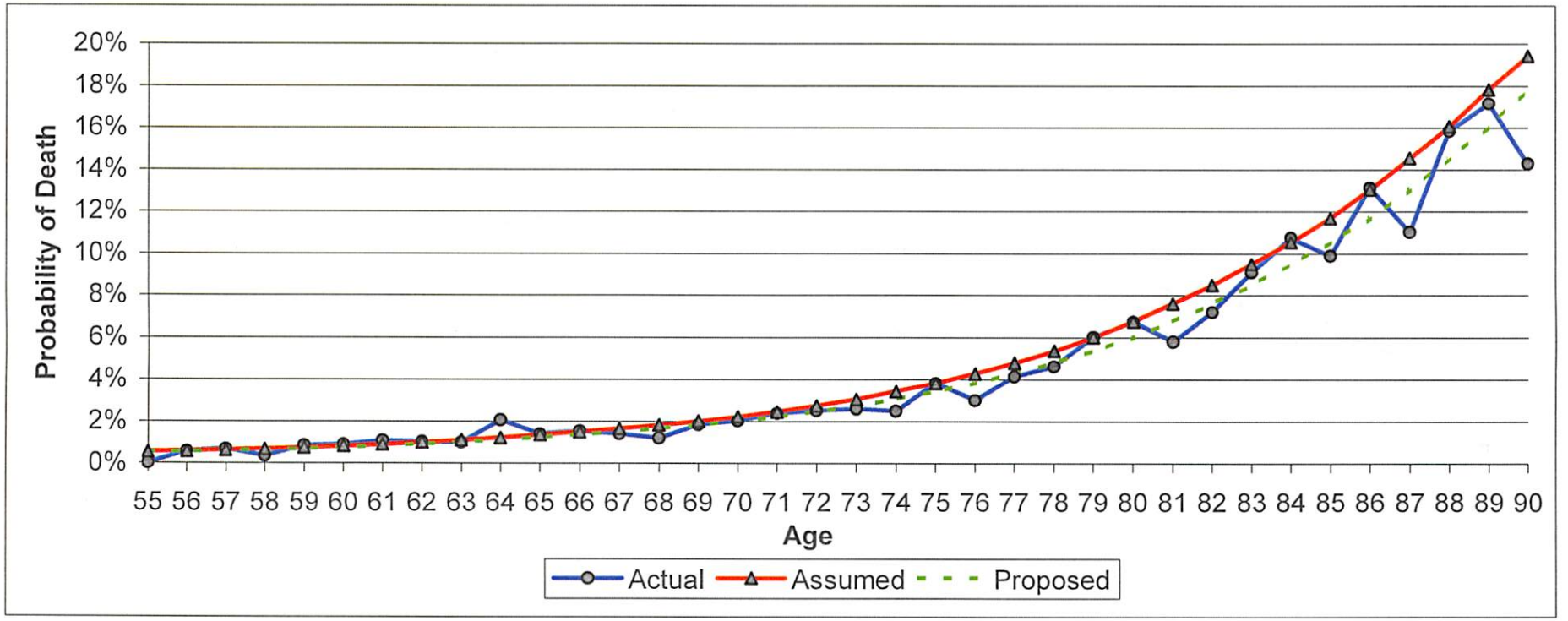
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-5

Probability of Death - Healthy Retirees

Males - Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	1,423	1,578	1,417
Actual/Expected		90%	100%

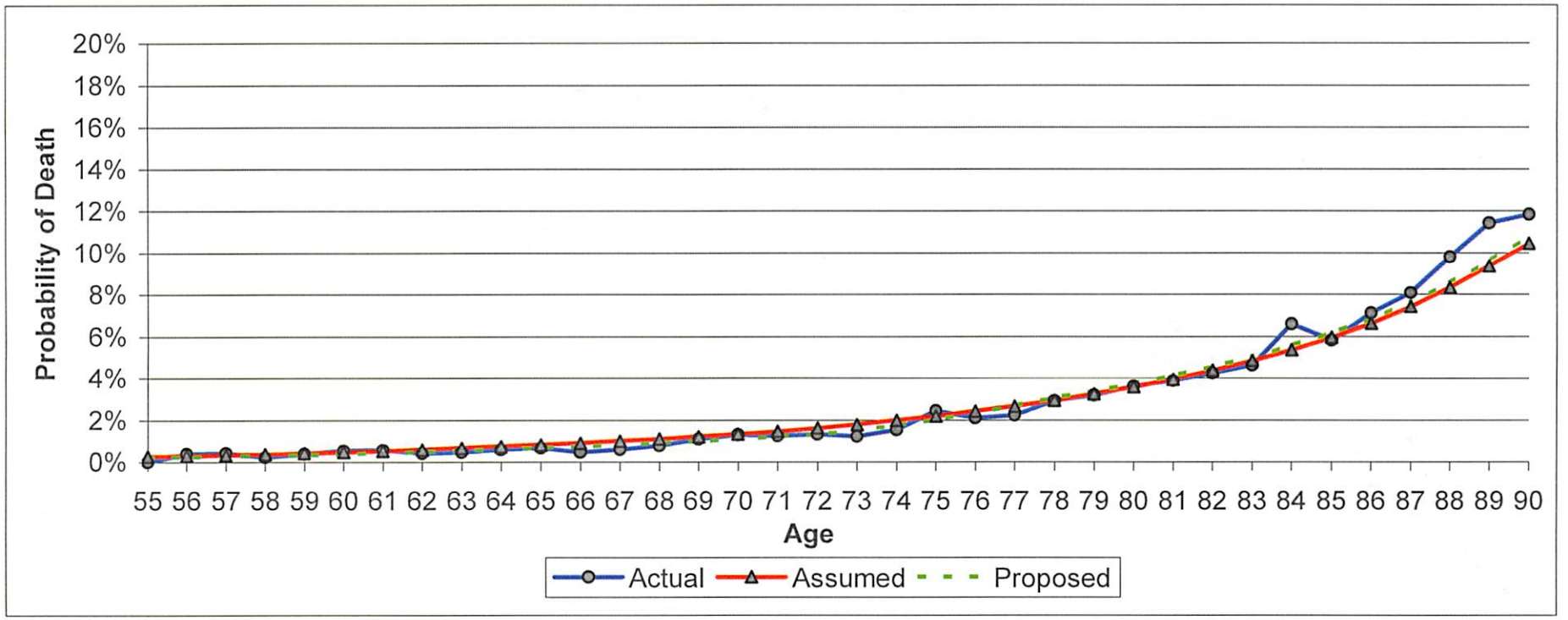
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-6

Probability of Death - Healthy Retirees

Females - Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	1,302	1,328	1,293
Actual/Expected		98%	101%

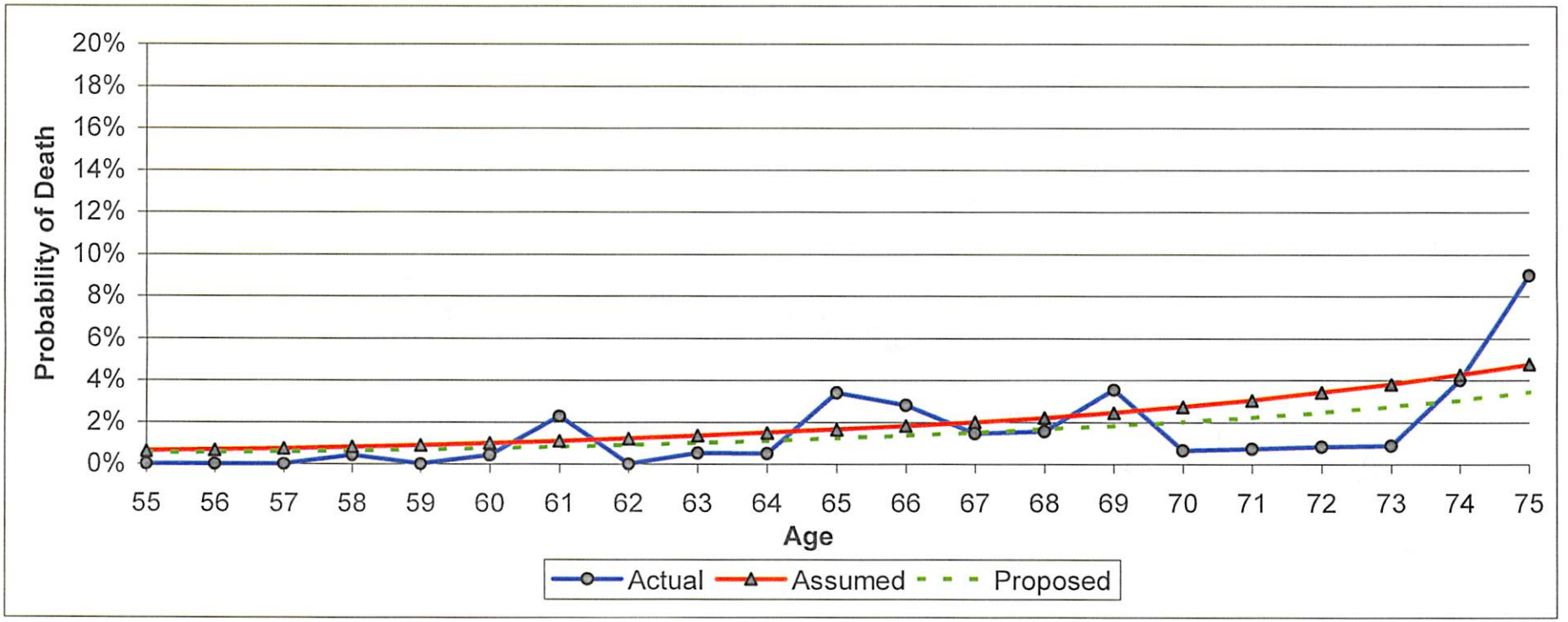
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-7

Probability of Death - Healthy Retirees

Males - Special Services Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	50	65	48
Actual/Expected		77%	104%

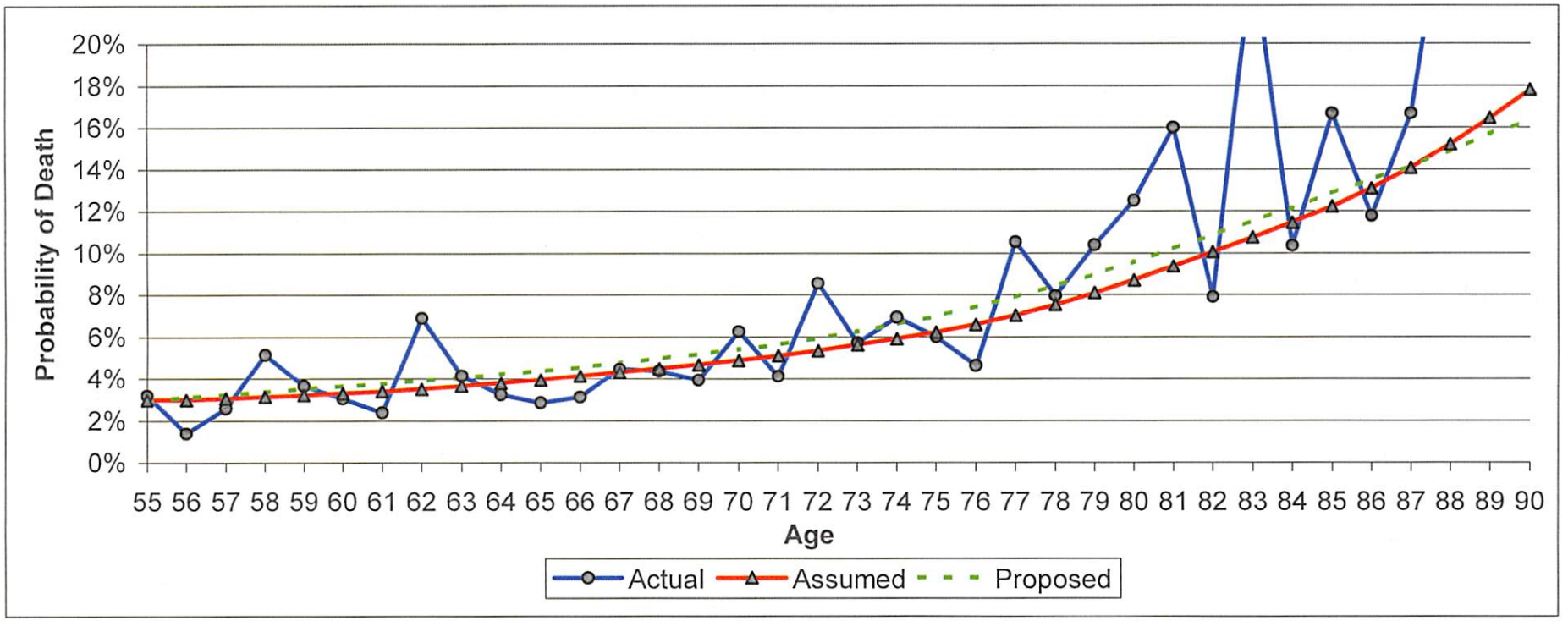
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-8

Probability of Death - Disabled Retirees

Males - Regular Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	225	201	221
Actual/Expected		112%	102%

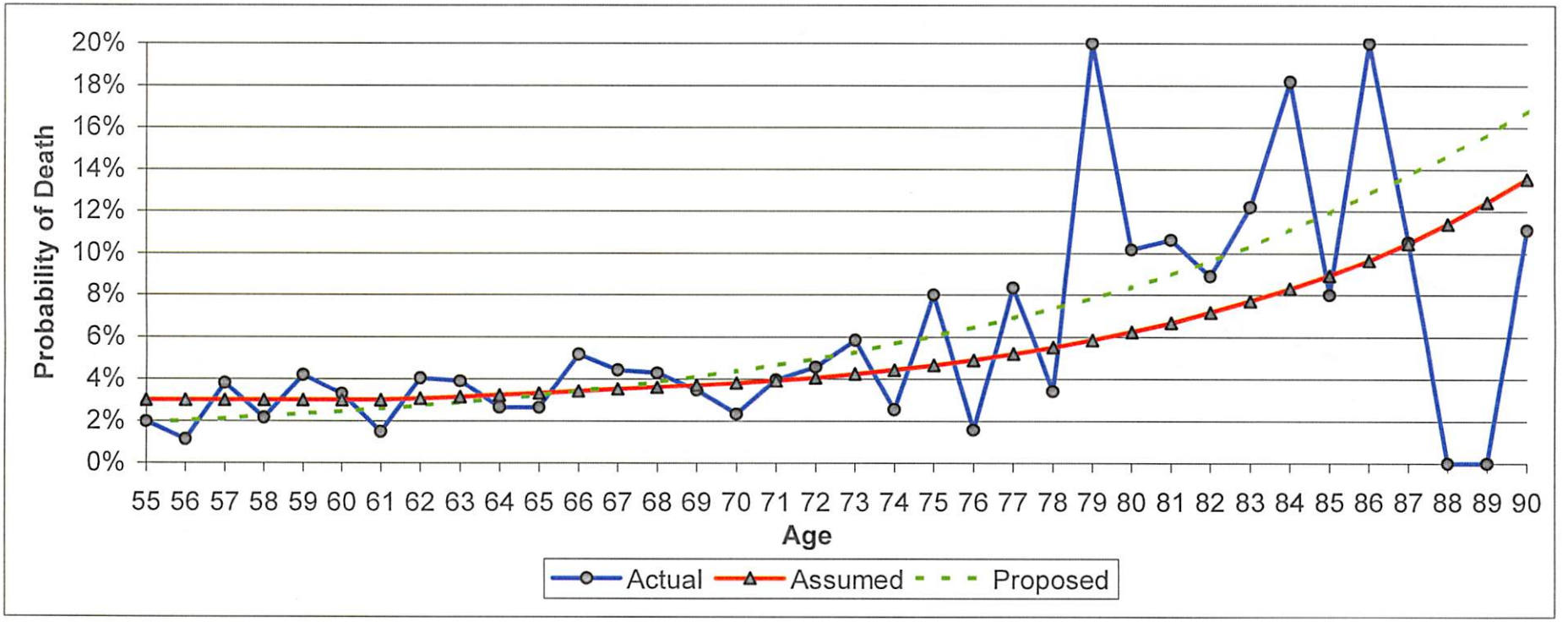
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-9

Probability of Death - Disabled Retirees

Females - Regular Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Count	237	216	226
Actual/Expected		110%	105%

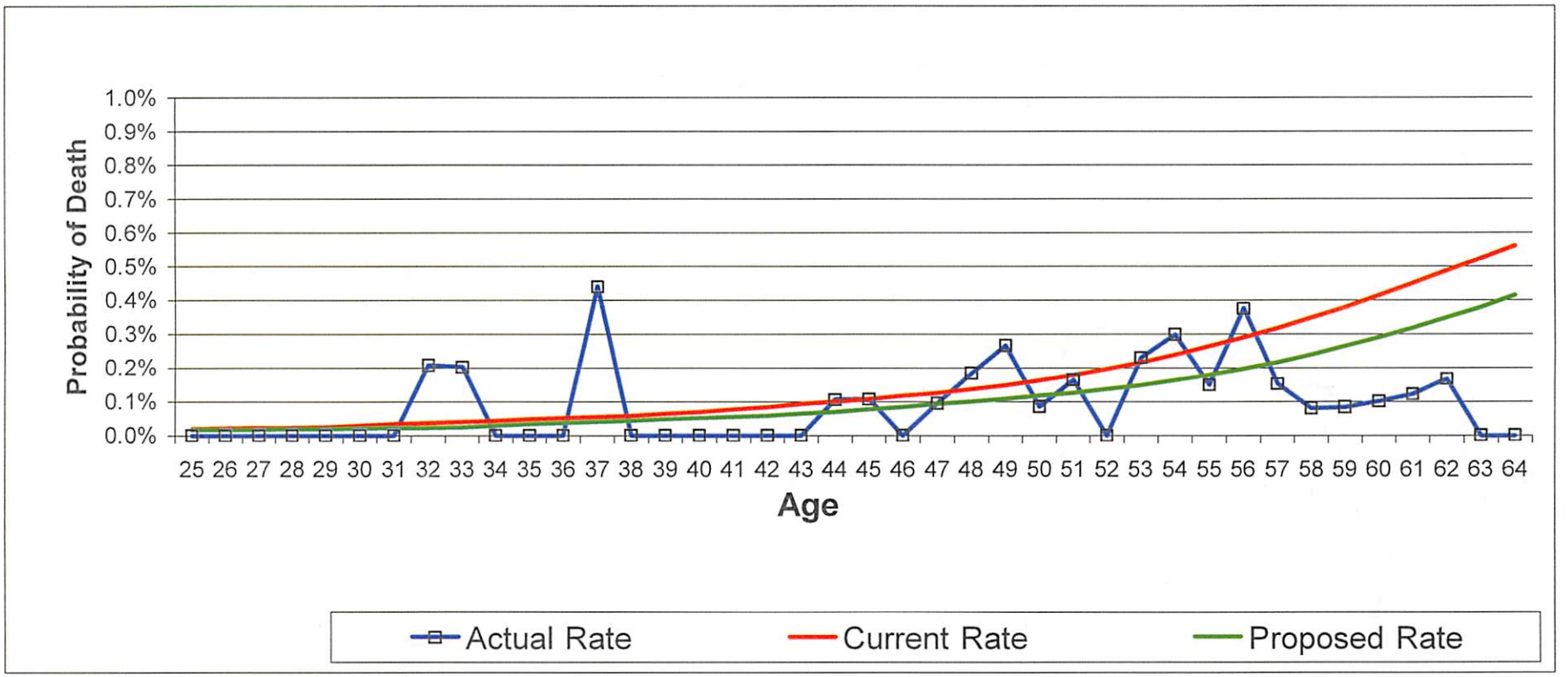
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-10

Probability of Death - Active Members

Males - State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	37	61	43
Actual/Expected		61%	86%

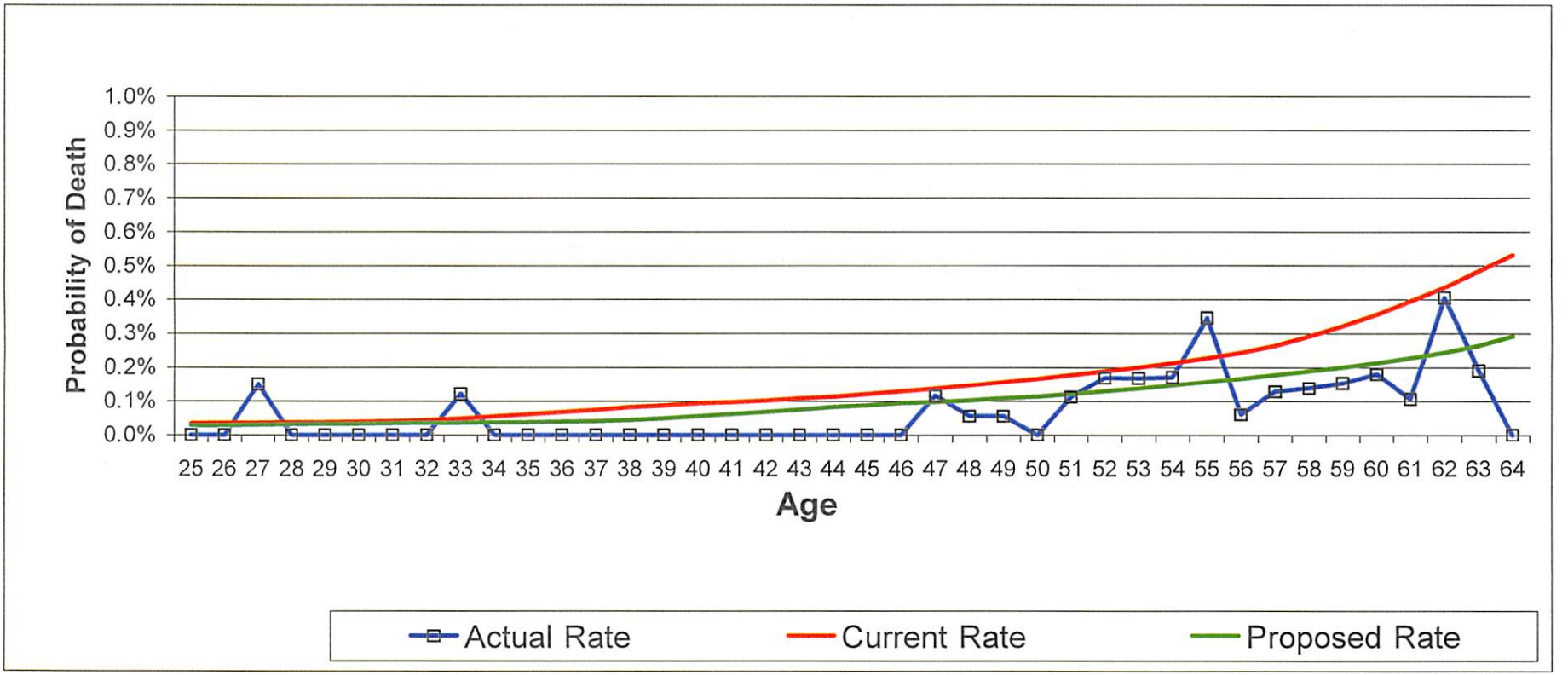
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-11

Probability of Death - Active Members

Females - State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	37	77	51
Actual/Expected		48%	73%

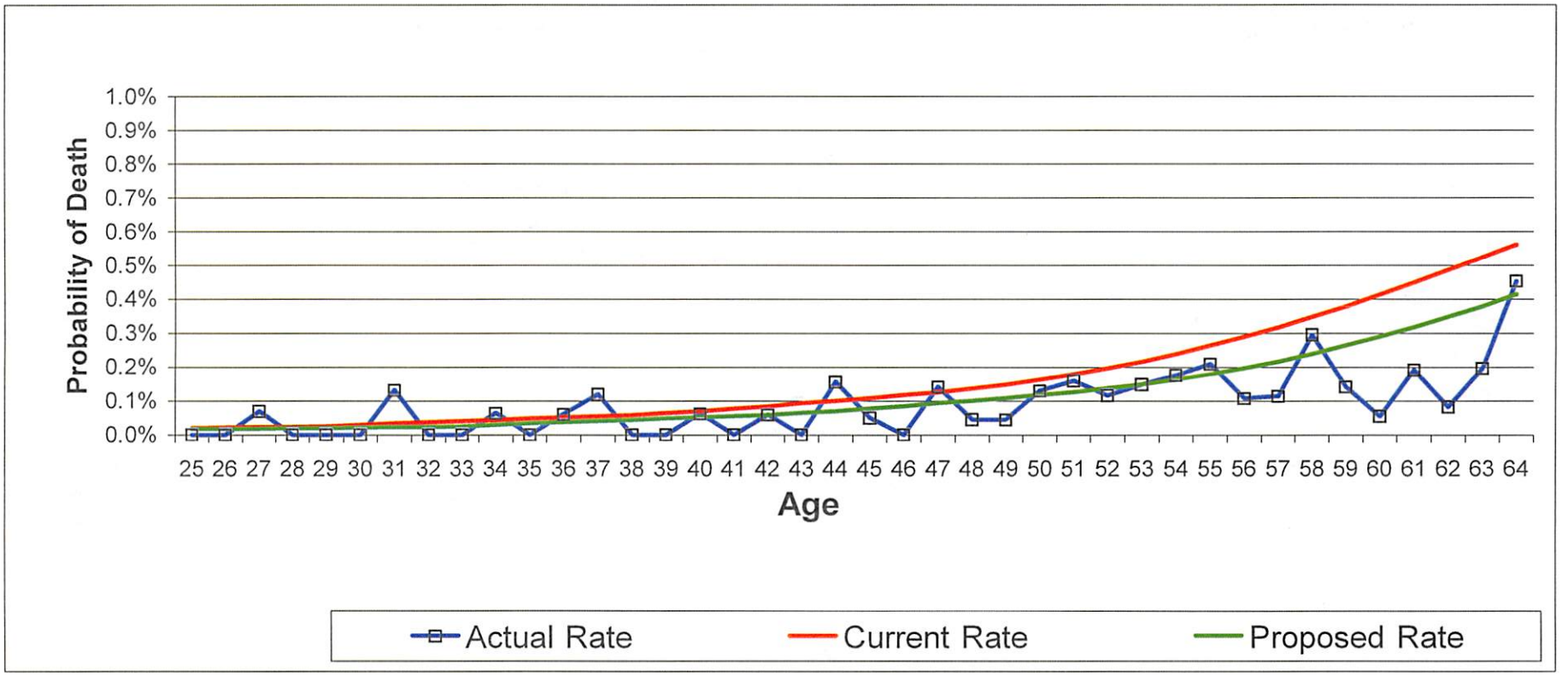
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-12

Probability of Death - Active Members

Males - School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	70	127	89
Actual/Expected		55%	79%

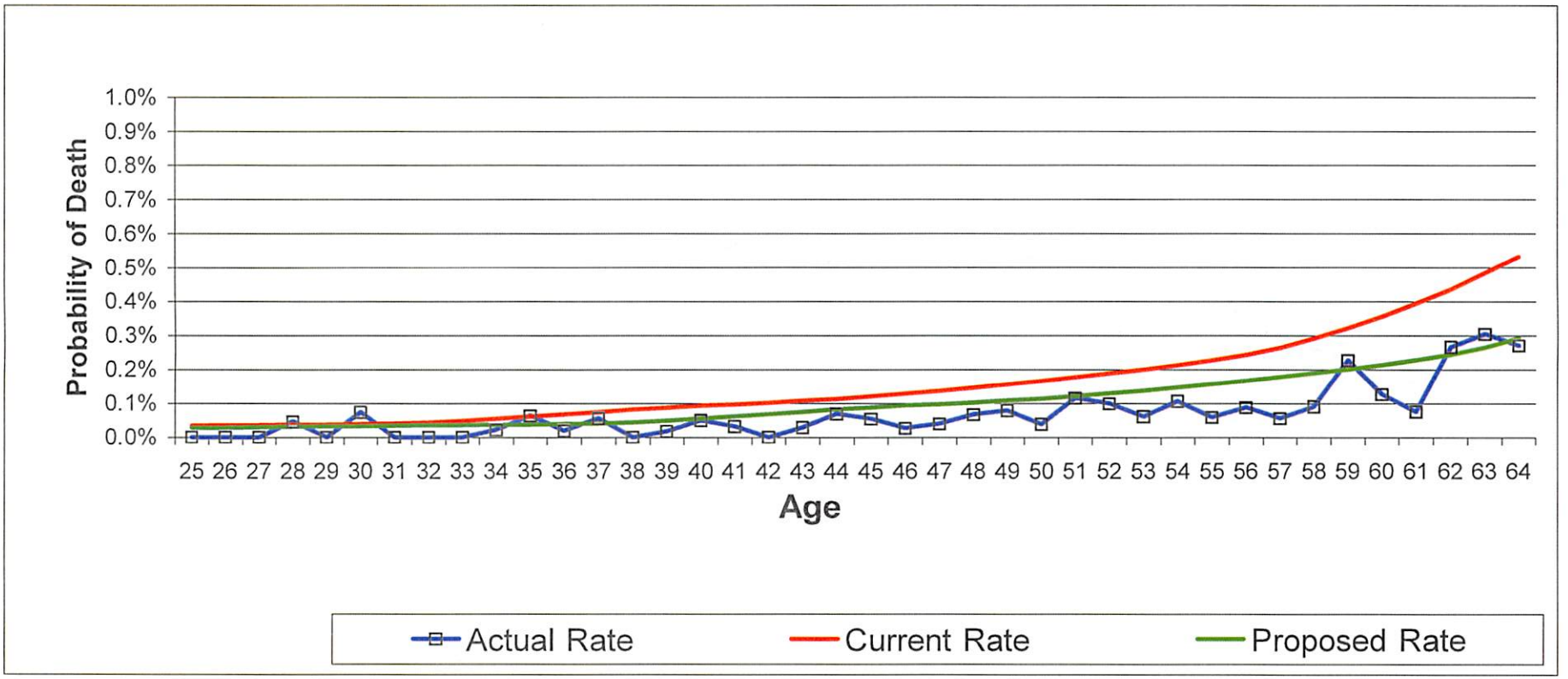
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-13

Probability of Death - Active Members

Females - School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	144	360	236
Actual/Expected		40%	61%

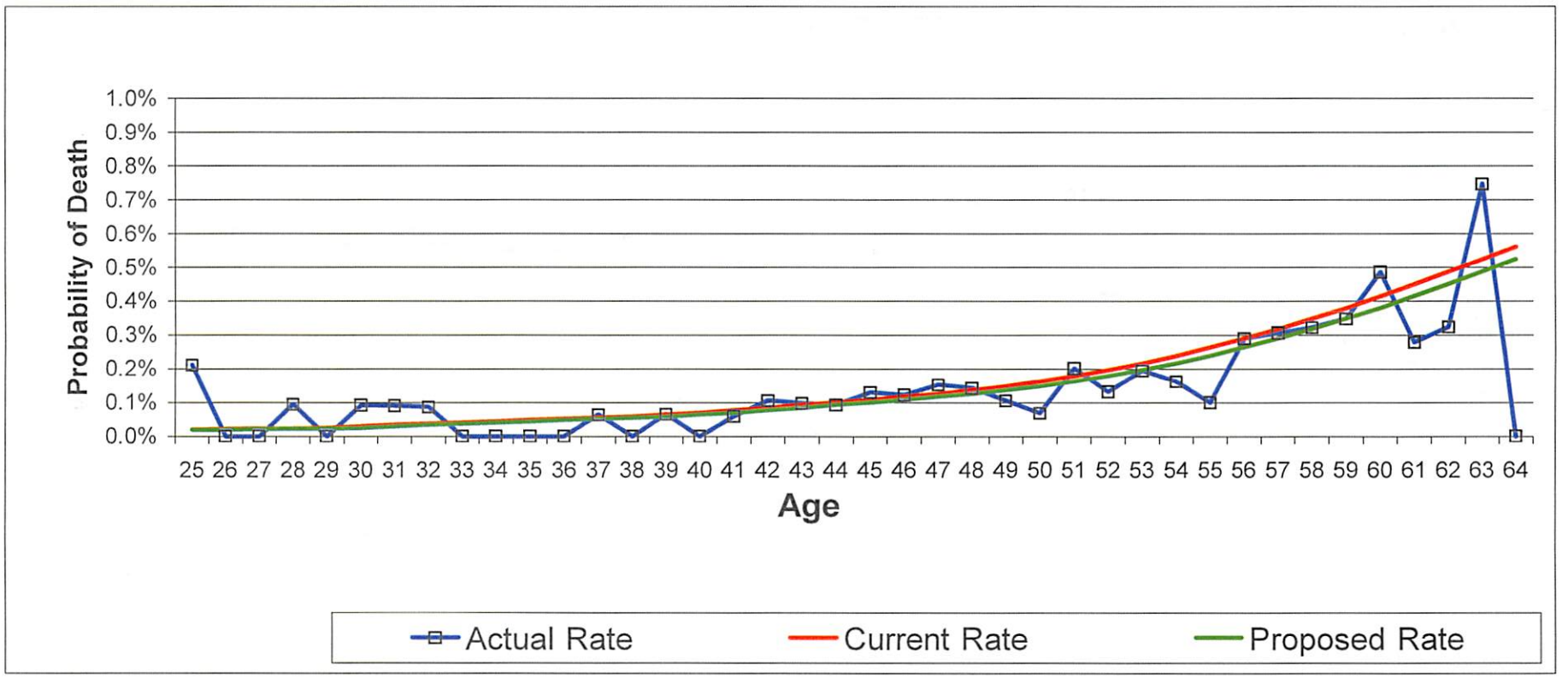
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-14

Probability of Death - Active Members

Males - Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	119	140	128
Actual/Expected		85%	93%

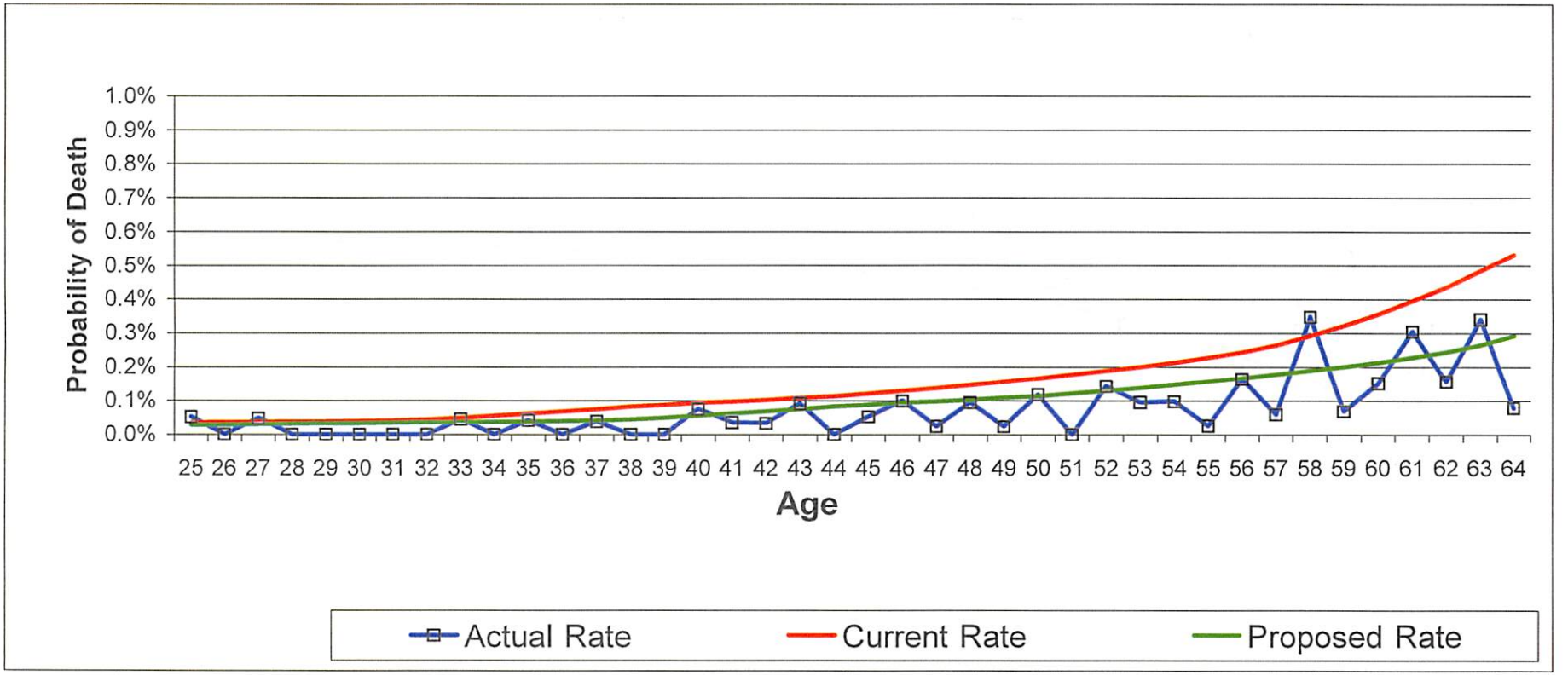
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-15

Probability of Death - Active Members

Females - Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	85	188	122
Actual/Expected		45%	70%

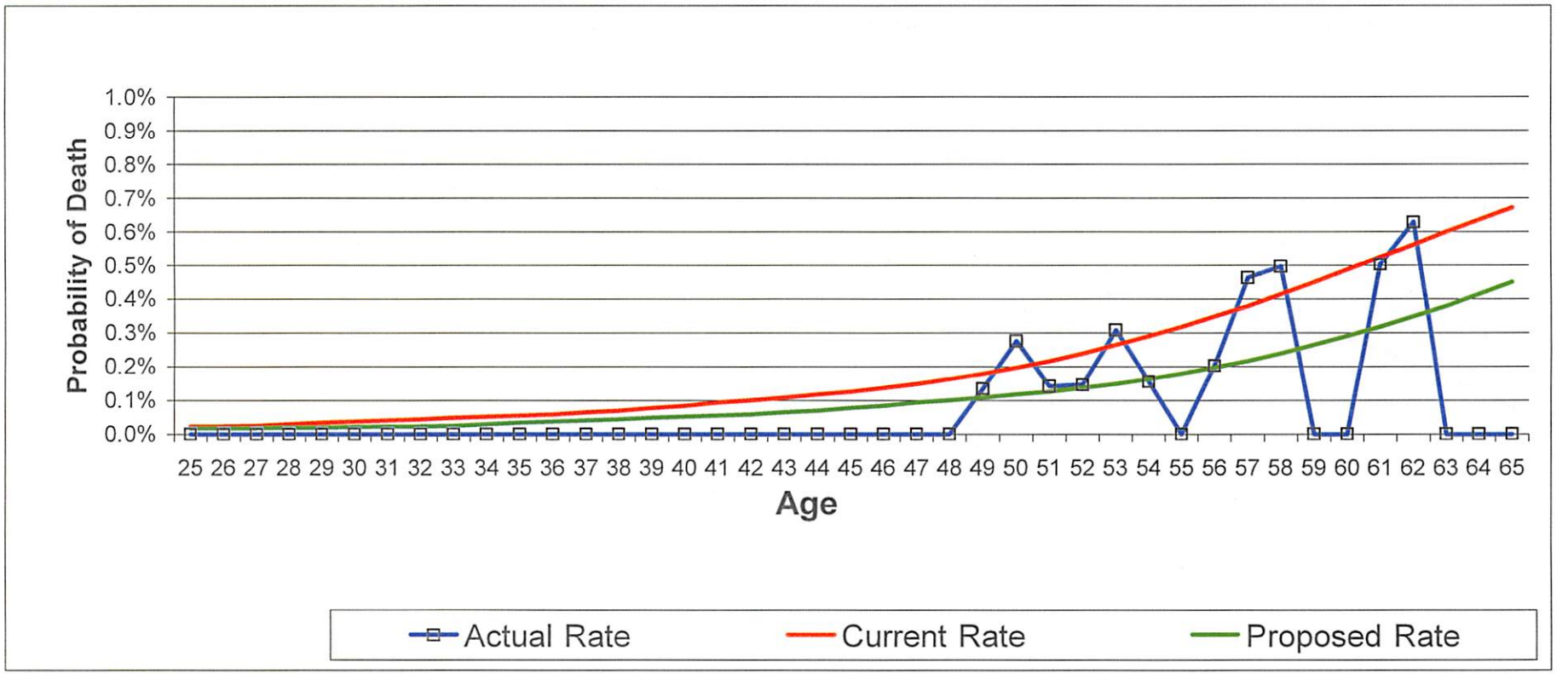
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit C-16

Probability of Death - Active Members

Males - Special Services Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	15	35	21
Actual/Expected		43%	71%

Data Summary C-1
Probability of Death - Healthy Retirees
Males - State Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	43	-	0.0%	0.2	0.5%	0.2	0.5%
56	144	1	0.7%	0.8	0.6%	0.8	0.5%
57	220	1	0.5%	1.4	0.6%	1.3	0.6%
58	276	7	2.5%	1.8	0.7%	1.7	0.6%
59	357	6	1.7%	2.6	0.7%	2.4	0.7%
60	459	7	1.5%	3.7	0.8%	3.4	0.7%
61	473	3	0.6%	4.2	0.9%	3.8	0.8%
62	546	2	0.4%	5.4	1.0%	4.9	0.9%
63	648	8	1.2%	7.1	1.1%	6.4	1.0%
64	680	9	1.3%	8.3	1.2%	7.5	1.1%
65	730	10	1.4%	9.9	1.4%	8.9	1.2%
66	759	5	0.7%	11.4	1.5%	10.3	1.4%
67	729	15	2.1%	12.0	1.6%	10.9	1.5%
68	723	12	1.7%	13.2	1.8%	11.9	1.6%
69	717	8	1.1%	14.3	2.0%	13.1	1.8%
70	747	20	2.7%	16.5	2.2%	14.9	2.0%
71	774	17	2.2%	19.0	2.5%	17.1	2.2%
72	745	12	1.6%	20.4	2.7%	18.3	2.5%
73	730	18	2.5%	22.3	3.0%	20.0	2.7%
74	696	18	2.6%	23.9	3.4%	21.2	3.0%
75	638	23	3.6%	24.4	3.8%	21.9	3.4%
76	623	28	4.5%	26.7	4.3%	23.8	3.8%
77	612	28	4.6%	29.3	4.8%	26.2	4.3%
78	559	29	5.2%	30.0	5.4%	26.8	4.8%
79	559	41	7.3%	33.5	6.0%	30.0	5.4%
80	534	29	5.4%	36.1	6.8%	32.0	6.0%
81	534	37	6.9%	40.6	7.6%	36.1	6.8%
82	508	27	5.3%	43.1	8.5%	38.7	7.6%
83	463	43	9.3%	44.0	9.5%	39.3	8.5%
84	432	47	10.9%	45.6	10.5%	41.0	9.5%
85	381	42	11.0%	44.5	11.7%	40.2	10.5%
86	322	41	12.7%	42.0	13.0%	37.6	11.7%
87	288	37	12.8%	41.9	14.5%	37.6	13.0%
88	229	33	14.4%	36.8	16.1%	33.3	14.5%
89	172	30	17.4%	30.7	17.8%	27.6	16.1%
90	137	29	21.2%	26.6	19.4%	24.4	17.8%
	18,187	723	4.0%	774.1	4.3%	695.4	3.8%

Data Summary C-2
Probability of Death - Healthy Retirees
Females - State Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	58	1	1.7%	0.2	0.3%	0.2	0.3%
56	202	1	0.5%	0.6	0.3%	0.7	0.3%
57	279	-	0.0%	0.9	0.3%	1.1	0.4%
58	375	4	1.1%	1.4	0.4%	1.6	0.4%
59	458	4	0.9%	1.9	0.4%	2.2	0.5%
60	472	3	0.6%	2.2	0.5%	2.5	0.5%
61	540	4	0.7%	2.9	0.5%	3.2	0.6%
62	593	3	0.5%	3.5	0.6%	3.9	0.7%
63	699	8	1.1%	4.7	0.7%	5.1	0.7%
64	750	4	0.5%	5.6	0.7%	6.0	0.8%
65	822	9	1.1%	6.8	0.8%	7.2	0.9%
66	831	11	1.3%	7.5	0.9%	8.0	1.0%
67	827	11	1.3%	8.3	1.0%	8.8	1.1%
68	817	8	1.0%	9.0	1.1%	9.6	1.2%
69	798	11	1.4%	9.7	1.2%	10.3	1.3%
70	794	15	1.9%	10.6	1.3%	11.3	1.4%
71	779	15	1.9%	11.4	1.5%	12.3	1.6%
72	737	8	1.1%	11.9	1.6%	12.9	1.7%
73	718	14	1.9%	12.8	1.8%	14.2	2.0%
74	685	11	1.6%	13.6	2.0%	15.1	2.2%
75	677	16	2.4%	14.8	2.2%	16.8	2.5%
76	687	19	2.8%	16.7	2.4%	19.3	2.8%
77	683	22	3.2%	18.1	2.7%	21.6	3.2%
78	669	23	3.4%	19.6	2.9%	23.8	3.6%
79	640	23	3.6%	20.8	3.2%	25.2	3.9%
80	645	33	5.1%	23.1	3.6%	28.1	4.4%
81	594	31	5.2%	23.5	4.0%	28.7	4.8%
82	589	31	5.3%	25.7	4.4%	31.5	5.4%
83	558	29	5.2%	27.0	4.8%	33.2	6.0%
84	499	24	4.8%	26.7	5.4%	33.3	6.7%
85	478	39	8.2%	28.4	6.0%	35.9	7.5%
86	407	40	9.8%	26.9	6.6%	34.3	8.4%
87	357	37	10.4%	26.5	7.4%	33.5	9.4%
88	319	36	11.3%	26.6	8.3%	33.5	10.5%
89	265	25	9.4%	24.8	9.4%	30.8	11.6%
90	229	40	17.5%	23.9	10.4%	29.2	12.7%
	20,530	613	3.0%	498.6	2.4%	594.9	2.9%

Data Summary C-3
Probability of Death - Healthy Retirees
Males - School Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	161	2	1.2%	0.9	0.5%	0.7	0.4%
56	578	4	0.7%	3.3	0.6%	2.6	0.5%
57	956	2	0.2%	5.9	0.6%	4.4	0.5%
58	1,305	7	0.5%	8.7	0.7%	6.3	0.5%
59	1,561	7	0.4%	11.4	0.7%	8.0	0.5%
60	1,661	10	0.6%	13.4	0.8%	9.2	0.6%
61	1,758	6	0.3%	15.7	0.9%	10.6	0.6%
62	1,917	7	0.4%	19.0	1.0%	12.6	0.7%
63	2,073	12	0.6%	22.8	1.1%	15.1	0.7%
64	2,193	17	0.8%	26.7	1.2%	17.6	0.8%
65	2,256	16	0.7%	30.6	1.4%	20.1	0.9%
66	2,238	28	1.3%	33.6	1.5%	22.1	1.0%
67	2,208	16	0.7%	36.4	1.6%	24.2	1.1%
68	2,149	26	1.2%	39.1	1.8%	26.2	1.2%
69	2,121	29	1.4%	42.4	2.0%	28.7	1.4%
70	2,186	41	1.9%	48.3	2.2%	32.4	1.5%
71	2,218	27	1.2%	54.4	2.5%	36.4	1.6%
72	2,155	33	1.5%	58.9	2.7%	38.7	1.8%
73	2,079	34	1.6%	63.4	3.0%	42.8	2.1%
74	2,005	49	2.4%	68.7	3.4%	47.4	2.4%
75	1,954	58	3.0%	74.7	3.8%	53.1	2.7%
76	1,800	66	3.7%	77.0	4.3%	56.5	3.1%
77	1,613	72	4.5%	77.3	4.8%	58.8	3.6%
78	1,449	55	3.8%	77.7	5.4%	60.9	4.2%
79	1,369	70	5.1%	82.1	6.0%	64.5	4.7%
80	1,325	73	5.5%	89.6	6.8%	69.8	5.3%
81	1,205	71	5.9%	91.7	7.6%	71.1	5.9%
82	1,098	71	6.5%	93.1	8.5%	72.5	6.6%
83	1,004	81	8.1%	95.4	9.5%	74.7	7.4%
84	892	63	7.1%	94.1	10.5%	74.7	8.4%
85	783	76	9.7%	91.5	11.7%	73.0	9.3%
86	666	72	10.8%	86.9	13.0%	69.6	10.4%
87	498	65	13.1%	72.4	14.5%	57.8	11.6%
88	418	59	14.1%	67.2	16.1%	53.8	12.9%
89	326	39	12.0%	58.1	17.8%	46.8	14.3%
90	279	52	18.6%	54.2	19.4%	44.6	16.0%
	52,457	1,416	2.7%	1,886.6	3.6%	1,408.3	2.7%

Data Summary C-4
Probability of Death - Healthy Retirees
Females - School Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	329	1	0.3%	0.9	0.3%	0.6	0.2%
56	1,222	4	0.3%	3.6	0.3%	2.4	0.2%
57	1,869	3	0.2%	6.2	0.3%	4.2	0.2%
58	2,505	7	0.3%	9.4	0.4%	6.3	0.3%
59	2,994	8	0.3%	12.7	0.4%	8.5	0.3%
60	3,253	7	0.2%	15.5	0.5%	10.3	0.3%
61	3,409	10	0.3%	18.2	0.5%	12.1	0.4%
62	3,572	15	0.4%	21.4	0.6%	14.3	0.4%
63	3,785	11	0.3%	25.3	0.7%	17.0	0.4%
64	3,982	27	0.7%	29.6	0.7%	20.0	0.5%
65	4,170	15	0.4%	34.3	0.8%	23.2	0.6%
66	4,293	21	0.5%	38.9	0.9%	26.5	0.6%
67	4,285	23	0.5%	42.9	1.0%	29.2	0.7%
68	4,254	25	0.6%	46.9	1.1%	31.9	0.8%
69	4,253	41	1.0%	51.5	1.2%	35.1	0.8%
70	4,212	37	0.9%	56.0	1.3%	38.2	0.9%
71	4,170	34	0.8%	61.0	1.5%	41.6	1.0%
72	3,933	36	0.9%	63.6	1.6%	43.2	1.1%
73	3,676	44	1.2%	65.5	1.8%	47.1	1.3%
74	3,548	55	1.6%	70.3	2.0%	53.0	1.5%
75	3,502	63	1.8%	76.6	2.2%	61.6	1.8%
76	3,471	52	1.5%	84.1	2.4%	71.2	2.1%
77	3,374	57	1.7%	89.6	2.7%	81.2	2.4%
78	3,292	75	2.3%	96.4	2.9%	91.8	2.8%
79	3,126	76	2.4%	101.5	3.2%	96.1	3.1%
80	2,953	110	3.7%	105.7	3.6%	100.7	3.4%
81	2,769	100	3.6%	109.4	4.0%	104.1	3.8%
82	2,621	93	3.5%	114.5	4.4%	108.7	4.1%
83	2,535	112	4.4%	122.6	4.8%	116.3	4.6%
84	2,444	125	5.1%	131.0	5.4%	124.1	5.1%
85	2,309	127	5.5%	137.4	6.0%	129.9	5.6%
86	2,090	141	6.7%	138.3	6.6%	130.6	6.2%
87	1,934	157	8.1%	143.6	7.4%	134.4	6.9%
88	1,718	153	8.9%	143.3	8.3%	133.9	7.8%
89	1,528	132	8.6%	143.1	9.4%	133.8	8.8%
90	1,365	158	11.6%	142.4	10.4%	134.3	9.8%
	108,745	2,155	2.0%	2,553.0	2.3%	2,217.3	2.0%

Data Summary C-5
Probability of Death - Healthy Retirees
Males - Other Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	110	-	0.0%	0.6	0.5%	0.6	0.5%
56	349	2	0.6%	2.0	0.6%	1.9	0.5%
57	446	3	0.7%	2.7	0.6%	2.5	0.6%
58	587	2	0.3%	3.9	0.7%	3.6	0.6%
59	714	6	0.8%	5.2	0.7%	4.8	0.7%
60	790	7	0.9%	6.4	0.8%	5.8	0.7%
61	842	9	1.1%	7.5	0.9%	6.8	0.8%
62	887	9	1.0%	8.8	1.0%	7.9	0.9%
63	1,108	11	1.0%	12.2	1.1%	11.0	1.0%
64	1,172	24	2.0%	14.2	1.2%	12.9	1.1%
65	1,290	18	1.4%	17.5	1.4%	15.7	1.2%
66	1,435	22	1.5%	21.6	1.5%	19.5	1.4%
67	1,488	21	1.4%	24.5	1.6%	22.3	1.5%
68	1,494	18	1.2%	27.2	1.8%	24.6	1.6%
69	1,523	28	1.8%	30.4	2.0%	27.7	1.8%
70	1,585	32	2.0%	35.0	2.2%	31.7	2.0%
71	1,641	39	2.4%	40.3	2.5%	36.3	2.2%
72	1,593	40	2.5%	43.5	2.7%	39.1	2.5%
73	1,502	39	2.6%	45.8	3.0%	41.1	2.7%
74	1,484	37	2.5%	50.9	3.4%	45.3	3.0%
75	1,467	56	3.8%	56.0	3.8%	50.3	3.4%
76	1,437	43	3.0%	61.5	4.3%	54.9	3.8%
77	1,423	59	4.1%	68.2	4.8%	60.9	4.3%
78	1,344	62	4.6%	72.1	5.4%	64.4	4.8%
79	1,264	76	6.0%	75.8	6.0%	67.8	5.4%
80	1,188	80	6.7%	80.3	6.8%	71.3	6.0%
81	1,087	63	5.8%	82.7	7.6%	73.5	6.8%
82	958	69	7.2%	81.3	8.5%	72.9	7.6%
83	837	76	9.1%	79.5	9.5%	71.0	8.5%
84	763	82	10.7%	80.5	10.5%	72.5	9.5%
85	667	66	9.9%	78.0	11.7%	70.3	10.5%
86	624	82	13.1%	81.4	13.0%	72.9	11.7%
87	553	61	11.0%	80.4	14.5%	72.1	13.0%
88	473	75	15.9%	76.0	16.1%	68.8	14.5%
89	373	64	17.2%	66.5	17.8%	59.9	16.1%
90	294	42	14.3%	57.1	19.4%	52.4	17.8%
	36,792	1,423	3.9%	1,577.6	4.3%	1,416.9	3.9%

Data Summary C-6
Probability of Death - Healthy Retirees
Females - Other Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	147	-	0.0%	0.4	0.3%	0.3	0.2%
56	504	2	0.4%	1.5	0.3%	1.2	0.2%
57	704	3	0.4%	2.3	0.3%	1.9	0.3%
58	881	2	0.2%	3.3	0.4%	2.6	0.3%
59	1,008	4	0.4%	4.3	0.4%	3.4	0.3%
60	1,118	6	0.5%	5.3	0.5%	4.3	0.4%
61	1,235	7	0.6%	6.6	0.5%	5.3	0.4%
62	1,394	6	0.4%	8.3	0.6%	6.7	0.5%
63	1,690	8	0.5%	11.3	0.7%	9.1	0.5%
64	1,836	11	0.6%	13.6	0.7%	11.0	0.6%
65	1,930	13	0.7%	15.9	0.8%	12.9	0.7%
66	2,141	10	0.5%	19.4	0.9%	15.8	0.7%
67	2,195	13	0.6%	22.0	1.0%	17.9	0.8%
68	2,173	17	0.8%	23.9	1.1%	19.6	0.9%
69	2,201	24	1.1%	26.6	1.2%	21.8	1.0%
70	2,222	29	1.3%	29.5	1.3%	24.2	1.1%
71	2,241	28	1.2%	32.8	1.5%	26.8	1.2%
72	2,251	30	1.3%	36.4	1.6%	29.6	1.3%
73	2,148	26	1.2%	38.3	1.8%	32.6	1.5%
74	2,103	32	1.5%	41.7	2.0%	36.6	1.7%
75	2,051	50	2.4%	44.9	2.2%	41.3	2.0%
76	1,950	41	2.1%	47.3	2.4%	45.2	2.3%
77	1,883	42	2.2%	50.0	2.7%	50.4	2.7%
78	1,747	51	2.9%	51.1	2.9%	53.4	3.1%
79	1,661	53	3.2%	53.9	3.2%	55.9	3.4%
80	1,608	58	3.6%	57.6	3.6%	60.0	3.7%
81	1,552	60	3.9%	61.3	4.0%	63.9	4.1%
82	1,507	64	4.2%	65.8	4.4%	68.5	4.5%
83	1,387	64	4.6%	67.1	4.8%	69.7	5.0%
84	1,273	84	6.6%	68.2	5.4%	70.8	5.6%
85	1,151	67	5.8%	68.5	6.0%	70.9	6.2%
86	1,055	75	7.1%	69.8	6.6%	72.2	6.8%
87	966	78	8.1%	71.7	7.4%	73.5	7.6%
88	848	83	9.8%	70.7	8.3%	72.4	8.5%
89	736	84	11.4%	68.9	9.4%	70.6	9.6%
90	651	77	11.8%	67.9	10.4%	70.1	10.8%
	54,148	1,302	2.4%	1,328.3	2.5%	1,292.5	2.4%

Data Summary C-7
Probability of Death - Healthy Retirees
Males - Special Services Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	92	-	0.0%	0.6	0.6%	0.5	0.5%
56	183	-	0.0%	1.2	0.7%	1.0	0.5%
57	222	-	0.0%	1.6	0.7%	1.3	0.6%
58	235	1	0.4%	1.9	0.8%	1.4	0.6%
59	255	-	0.0%	2.3	0.9%	1.7	0.7%
60	240	1	0.4%	2.4	1.0%	1.8	0.7%
61	220	5	2.3%	2.4	1.1%	1.8	0.8%
62	187	-	0.0%	2.3	1.2%	1.7	0.9%
63	188	1	0.5%	2.6	1.4%	1.9	1.0%
64	200	1	0.5%	3.0	1.5%	2.2	1.1%
65	206	7	3.4%	3.4	1.6%	2.5	1.2%
66	214	6	2.8%	3.9	1.8%	2.9	1.4%
67	205	3	1.5%	4.1	2.0%	3.1	1.5%
68	192	3	1.6%	4.2	2.2%	3.2	1.6%
69	170	6	3.5%	4.2	2.5%	3.1	1.8%
70	152	1	0.7%	4.2	2.7%	3.0	2.0%
71	136	1	0.7%	4.1	3.0%	3.0	2.2%
72	120	1	0.8%	4.1	3.4%	2.9	2.5%
73	112	1	0.9%	4.3	3.8%	3.1	2.7%
74	100	4	4.0%	4.3	4.3%	3.0	3.0%
75	89	8	9.0%	4.3	4.8%	3.1	3.4%
	3,718	50	1.3%	65.3	1.8%	48.0	1.3%

Data Summary C-8
Probability of Death - Disabled Retirees
Males - Regular Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	125	4	3.2%	3.7	3.0%	3.7	3.0%
56	143	2	1.4%	4.3	3.0%	4.4	3.1%
57	154	4	2.6%	4.7	3.1%	5.0	3.2%
58	175	9	5.1%	5.5	3.1%	5.9	3.4%
59	192	7	3.6%	6.2	3.2%	6.7	3.5%
60	197	6	3.0%	6.5	3.3%	7.2	3.6%
61	210	5	2.4%	7.1	3.4%	7.9	3.8%
62	203	14	6.9%	7.1	3.5%	7.9	3.9%
63	193	8	4.1%	7.0	3.6%	7.8	4.0%
64	185	6	3.2%	7.0	3.8%	7.8	4.2%
65	175	5	2.9%	6.9	4.0%	7.7	4.4%
66	160	5	3.1%	6.6	4.1%	7.3	4.5%
67	179	8	4.5%	7.7	4.3%	8.5	4.8%
68	160	7	4.4%	7.2	4.5%	7.9	5.0%
69	178	7	3.9%	8.3	4.7%	9.2	5.2%
70	192	12	6.3%	9.4	4.9%	10.4	5.4%
71	170	7	4.1%	8.7	5.1%	9.6	5.6%
72	164	14	8.5%	8.8	5.3%	9.7	5.9%
73	140	8	5.7%	7.9	5.6%	8.7	6.2%
74	130	9	6.9%	7.7	5.9%	8.6	6.6%
75	117	7	6.0%	7.3	6.2%	8.2	7.0%
76	108	5	4.6%	7.1	6.6%	8.0	7.4%
77	95	10	10.5%	6.7	7.0%	7.5	7.9%
78	88	7	8.0%	6.6	7.5%	7.4	8.4%
79	77	8	10.4%	6.2	8.1%	6.9	9.0%
80	64	8	12.5%	5.6	8.7%	6.1	9.6%
81	50	8	16.0%	4.7	9.4%	5.1	10.2%
82	38	3	7.9%	3.8	10.1%	4.1	10.8%
83	29	7	24.1%	3.1	10.8%	3.3	11.5%
84	29	3	10.3%	3.3	11.5%	3.5	12.1%
85	24	4	16.7%	2.9	12.2%	3.1	12.8%
86	17	2	11.8%	2.2	13.1%	2.3	13.5%
87	12	2	16.7%	1.7	14.1%	1.7	14.1%
88	7	2	28.6%	1.1	15.2%	1.0	14.9%
89	3	1	33.3%	0.5	16.4%	0.5	15.7%
90	2	1	50.0%	0.4	17.8%	0.3	16.3%
	4,185	225	5.4%	201.4	4.8%	221.0	5.3%

Data Summary C-9
Probability of Death - Disabled Retirees
Females - Regular Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	255	5	2.0%	7.6	3.0%	4.9	1.9%
56	267	3	1.1%	8.0	3.0%	5.4	2.0%
57	289	11	3.8%	8.7	3.0%	6.1	2.1%
58	279	6	2.2%	8.4	3.0%	6.2	2.2%
59	286	12	4.2%	8.6	3.0%	6.6	2.3%
60	274	9	3.3%	8.2	3.0%	6.7	2.4%
61	270	4	1.5%	8.1	3.0%	6.9	2.6%
62	272	11	4.0%	8.3	3.1%	7.4	2.7%
63	282	11	3.9%	8.8	3.1%	8.1	2.9%
64	265	7	2.6%	8.5	3.2%	8.0	3.0%
65	266	7	2.6%	8.8	3.3%	8.5	3.2%
66	251	13	5.2%	8.6	3.4%	8.6	3.4%
67	226	10	4.4%	8.0	3.5%	8.2	3.6%
68	210	9	4.3%	7.6	3.6%	8.1	3.8%
69	202	7	3.5%	7.5	3.7%	8.3	4.1%
70	215	5	2.3%	8.2	3.8%	9.4	4.4%
71	202	8	4.0%	7.9	3.9%	9.4	4.7%
72	197	9	4.6%	8.0	4.1%	9.7	4.9%
73	188	11	5.9%	8.0	4.2%	9.9	5.3%
74	157	4	2.5%	7.0	4.4%	8.9	5.7%
75	150	12	8.0%	7.0	4.7%	9.1	6.0%
76	127	2	1.6%	6.2	4.9%	8.2	6.5%
77	108	9	8.3%	5.6	5.2%	7.4	6.9%
78	88	3	3.4%	4.9	5.5%	6.5	7.3%
79	70	14	20.0%	4.1	5.9%	5.5	7.8%
80	59	6	10.2%	3.7	6.2%	4.9	8.4%
81	47	5	10.6%	3.1	6.7%	4.2	8.9%
82	45	4	8.9%	3.2	7.2%	4.3	9.6%
83	41	5	12.2%	3.2	7.7%	4.2	10.3%
84	33	6	18.2%	2.7	8.3%	3.7	11.1%
85	25	2	8.0%	2.2	8.9%	3.0	11.9%
86	20	4	20.0%	1.9	9.7%	2.6	12.8%
87	19	2	10.5%	2.0	10.5%	2.6	13.7%
88	9	-	0.0%	1.0	11.4%	1.3	14.7%
89	10	-	0.0%	1.2	12.4%	1.6	15.7%
90	9	1	11.1%	1.2	13.5%	1.5	16.8%
	5,713	237	4.1%	216.2	3.8%	225.8	4.0%

Data Summary C-10
Probability of Death - Active Members
Males - State Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	284	-	0.000%	0.1	0.020%	0.0	0.017%
26	307	-	0.000%	0.1	0.020%	0.1	0.018%
27	345	-	0.000%	0.1	0.022%	0.1	0.018%
28	393	-	0.000%	0.1	0.023%	0.1	0.019%
29	409	-	0.000%	0.1	0.025%	0.1	0.020%
30	424	-	0.000%	0.1	0.029%	0.1	0.020%
31	475	-	0.000%	0.2	0.033%	0.1	0.022%
32	481	1	0.208%	0.2	0.037%	0.1	0.023%
33	494	1	0.202%	0.2	0.041%	0.1	0.025%
34	530	-	0.000%	0.2	0.044%	0.2	0.029%
35	595	-	0.000%	0.3	0.047%	0.2	0.033%
36	656	-	0.000%	0.3	0.051%	0.2	0.037%
37	682	3	0.440%	0.4	0.054%	0.3	0.041%
38	657	-	0.000%	0.4	0.058%	0.3	0.044%
39	660	-	0.000%	0.4	0.064%	0.3	0.047%
40	666	-	0.000%	0.5	0.070%	0.3	0.051%
41	762	-	0.000%	0.6	0.077%	0.4	0.054%
42	797	-	0.000%	0.7	0.084%	0.5	0.058%
43	868	-	0.000%	0.8	0.093%	0.6	0.064%
44	945	1	0.106%	0.9	0.100%	0.7	0.070%
45	934	1	0.107%	1.0	0.108%	0.7	0.077%
46	997	-	0.000%	1.2	0.117%	0.8	0.084%
47	1,047	1	0.096%	1.3	0.126%	1.0	0.093%
48	1,086	2	0.184%	1.5	0.136%	1.1	0.100%
49	1,128	3	0.266%	1.7	0.149%	1.2	0.108%
50	1,170	1	0.085%	1.9	0.162%	1.4	0.117%
51	1,212	2	0.165%	2.2	0.178%	1.5	0.126%
52	1,258	-	0.000%	2.5	0.196%	1.7	0.136%
53	1,302	3	0.230%	2.8	0.216%	1.9	0.149%
54	1,341	4	0.298%	3.2	0.239%	2.2	0.162%
55	1,339	2	0.149%	3.5	0.264%	2.4	0.178%
56	1,332	5	0.375%	3.9	0.291%	2.6	0.196%
57	1,309	2	0.153%	4.2	0.318%	2.8	0.216%
58	1,244	1	0.080%	4.3	0.347%	3.0	0.239%
59	1,186	1	0.084%	4.5	0.380%	3.1	0.264%
60	991	1	0.101%	4.1	0.414%	2.9	0.291%
61	819	1	0.122%	3.7	0.450%	2.6	0.318%
62	599	1	0.167%	2.9	0.487%	2.1	0.347%
63	416	-	0.000%	2.2	0.524%	1.6	0.380%
64	313	-	0.000%	1.8	0.562%	1.3	0.414%
	32,453	37	0.114%	60.8	0.187%	42.6	0.131%

Data Summary C-11
Probability of Death - Active Members
Females - State Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	507	-	0.000%	0.2	0.034%	0.1	0.026%
26	615	-	0.000%	0.2	0.034%	0.2	0.028%
27	666	1	0.150%	0.2	0.035%	0.2	0.029%
28	688	-	0.000%	0.2	0.036%	0.2	0.030%
29	747	-	0.000%	0.3	0.037%	0.2	0.031%
30	787	-	0.000%	0.3	0.038%	0.3	0.032%
31	795	-	0.000%	0.3	0.040%	0.3	0.034%
32	831	-	0.000%	0.4	0.043%	0.3	0.034%
33	828	1	0.121%	0.4	0.048%	0.3	0.035%
34	859	-	0.000%	0.5	0.054%	0.3	0.036%
35	885	-	0.000%	0.5	0.061%	0.3	0.037%
36	913	-	0.000%	0.6	0.068%	0.3	0.038%
37	970	-	0.000%	0.7	0.075%	0.4	0.040%
38	977	-	0.000%	0.8	0.081%	0.4	0.043%
39	907	-	0.000%	0.8	0.087%	0.4	0.048%
40	997	-	0.000%	0.9	0.092%	0.5	0.054%
41	1,089	-	0.000%	1.1	0.097%	0.7	0.061%
42	1,171	-	0.000%	1.2	0.102%	0.8	0.068%
43	1,299	-	0.000%	1.4	0.107%	1.0	0.075%
44	1,423	-	0.000%	1.6	0.113%	1.2	0.081%
45	1,558	-	0.000%	1.9	0.120%	1.4	0.087%
46	1,657	-	0.000%	2.1	0.128%	1.5	0.092%
47	1,731	2	0.116%	2.4	0.138%	1.7	0.097%
48	1,789	1	0.056%	2.6	0.146%	1.8	0.102%
49	1,795	1	0.056%	2.8	0.156%	1.9	0.107%
50	1,802	-	0.000%	3.0	0.166%	2.0	0.113%
51	1,780	2	0.112%	3.1	0.177%	2.1	0.120%
52	1,781	3	0.168%	3.4	0.188%	2.3	0.128%
53	1,786	3	0.168%	3.6	0.200%	2.5	0.138%
54	1,754	3	0.171%	3.7	0.213%	2.6	0.146%
55	1,735	6	0.346%	3.9	0.228%	2.7	0.156%
56	1,644	1	0.061%	4.0	0.244%	2.7	0.166%
57	1,555	2	0.129%	4.1	0.265%	2.8	0.177%
58	1,451	2	0.138%	4.2	0.291%	2.7	0.188%
59	1,304	2	0.153%	4.2	0.322%	2.6	0.200%
60	1,109	2	0.180%	4.0	0.357%	2.4	0.213%
61	937	1	0.107%	3.7	0.394%	2.1	0.228%
62	741	3	0.405%	3.2	0.436%	1.8	0.244%
63	524	1	0.191%	2.5	0.484%	1.4	0.265%
64	424	-	0.000%	2.3	0.532%	1.2	0.291%
	46,811	37	0.079%	77.4	0.165%	50.7	0.108%

Data Summary C-12
Probability of Death - Active Members
Males - School Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	1,328	-	0.000%	0.3	0.020%	0.2	0.017%
26	1,471	-	0.000%	0.3	0.020%	0.3	0.018%
27	1,446	1	0.069%	0.3	0.022%	0.3	0.018%
28	1,514	-	0.000%	0.3	0.023%	0.3	0.019%
29	1,542	-	0.000%	0.4	0.025%	0.3	0.020%
30	1,519	-	0.000%	0.4	0.029%	0.3	0.020%
31	1,516	2	0.132%	0.5	0.033%	0.3	0.022%
32	1,457	-	0.000%	0.5	0.037%	0.3	0.023%
33	1,493	-	0.000%	0.6	0.041%	0.4	0.025%
34	1,577	1	0.063%	0.7	0.044%	0.5	0.029%
35	1,615	-	0.000%	0.8	0.047%	0.5	0.033%
36	1,646	1	0.061%	0.8	0.051%	0.6	0.037%
37	1,679	2	0.119%	0.9	0.054%	0.7	0.041%
38	1,670	-	0.000%	1.0	0.058%	0.7	0.044%
39	1,657	-	0.000%	1.1	0.064%	0.8	0.047%
40	1,601	1	0.062%	1.1	0.070%	0.8	0.051%
41	1,666	-	0.000%	1.3	0.077%	0.9	0.054%
42	1,703	1	0.059%	1.4	0.084%	1.0	0.058%
43	1,777	-	0.000%	1.6	0.093%	1.1	0.064%
44	1,921	3	0.156%	1.9	0.100%	1.3	0.070%
45	2,004	1	0.050%	2.2	0.108%	1.5	0.077%
46	2,099	-	0.000%	2.5	0.117%	1.8	0.084%
47	2,128	3	0.141%	2.7	0.126%	2.0	0.093%
48	2,194	1	0.046%	3.0	0.136%	2.2	0.100%
49	2,245	1	0.045%	3.3	0.149%	2.4	0.108%
50	2,309	3	0.130%	3.7	0.162%	2.7	0.117%
51	2,501	4	0.160%	4.5	0.178%	3.2	0.126%
52	2,589	3	0.116%	5.1	0.196%	3.5	0.136%
53	2,692	4	0.149%	5.8	0.216%	4.0	0.149%
54	2,841	5	0.176%	6.8	0.239%	4.6	0.162%
55	2,873	6	0.209%	7.6	0.264%	5.1	0.178%
56	2,801	3	0.107%	8.1	0.291%	5.5	0.196%
57	2,627	3	0.114%	8.3	0.318%	5.7	0.216%
58	2,370	7	0.295%	8.2	0.347%	5.7	0.239%
59	2,121	3	0.141%	8.1	0.380%	5.6	0.264%
60	1,811	1	0.055%	7.5	0.414%	5.3	0.291%
61	1,569	3	0.191%	7.1	0.450%	5.0	0.318%
62	1,220	1	0.082%	5.9	0.487%	4.2	0.347%
63	1,019	2	0.196%	5.3	0.524%	3.9	0.380%
64	883	4	0.453%	5.0	0.562%	3.7	0.414%
	74,694	70	0.094%	127.0	0.170%	89.1	0.119%

Data Summary C-13
Probability of Death - Active Members
Females - School Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	4,095	-	0.000%	1.4	0.034%	1.1	0.026%
26	4,309	-	0.000%	1.5	0.034%	1.2	0.028%
27	4,248	-	0.000%	1.5	0.035%	1.2	0.029%
28	4,333	2	0.046%	1.6	0.036%	1.3	0.030%
29	4,180	-	0.000%	1.5	0.037%	1.3	0.031%
30	4,047	3	0.074%	1.5	0.038%	1.3	0.032%
31	4,016	-	0.000%	1.6	0.040%	1.3	0.034%
32	3,907	-	0.000%	1.7	0.043%	1.3	0.034%
33	4,051	-	0.000%	2.0	0.048%	1.4	0.035%
34	4,383	1	0.023%	2.4	0.054%	1.6	0.036%
35	4,703	3	0.064%	2.9	0.061%	1.7	0.037%
36	5,098	1	0.020%	3.5	0.068%	1.9	0.038%
37	5,327	3	0.056%	4.0	0.075%	2.1	0.040%
38	5,656	-	0.000%	4.6	0.081%	2.4	0.043%
39	5,743	1	0.017%	5.0	0.087%	2.8	0.048%
40	6,009	3	0.050%	5.6	0.092%	3.3	0.054%
41	6,208	2	0.032%	6.0	0.097%	3.8	0.061%
42	6,459	-	0.000%	6.6	0.102%	4.4	0.068%
43	6,801	2	0.029%	7.3	0.107%	5.1	0.075%
44	7,190	5	0.070%	8.1	0.113%	5.8	0.081%
45	7,382	4	0.054%	8.9	0.120%	6.4	0.087%
46	7,507	2	0.027%	9.6	0.128%	6.9	0.092%
47	7,550	3	0.040%	10.4	0.138%	7.3	0.097%
48	7,495	5	0.067%	11.0	0.146%	7.6	0.102%
49	7,589	6	0.079%	11.8	0.156%	8.1	0.107%
50	7,709	3	0.039%	12.8	0.166%	8.7	0.113%
51	7,822	9	0.115%	13.8	0.177%	9.4	0.120%
52	8,057	8	0.099%	15.2	0.188%	10.3	0.128%
53	8,200	5	0.061%	16.4	0.200%	11.3	0.138%
54	8,430	9	0.107%	17.9	0.213%	12.3	0.146%
55	8,509	5	0.059%	19.4	0.228%	13.3	0.156%
56	7,924	7	0.088%	19.3	0.244%	13.2	0.166%
57	7,235	4	0.055%	19.2	0.265%	12.8	0.177%
58	6,625	6	0.091%	19.3	0.291%	12.5	0.188%
59	5,728	13	0.227%	18.4	0.322%	11.5	0.200%
60	4,725	6	0.127%	16.9	0.357%	10.0	0.213%
61	3,968	3	0.076%	15.6	0.394%	9.0	0.228%
62	3,001	8	0.267%	13.1	0.436%	7.3	0.244%
63	2,303	7	0.304%	11.2	0.484%	6.1	0.265%
64	1,847	5	0.271%	9.8	0.532%	5.4	0.291%
	230,369	144	0.063%	360.1	0.156%	236.1	0.102%

Data Summary C-14
Probability of Death - Active Members
Males - Other Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	949	2	0.211%	0.2	0.020%	0.2	0.019%
26	985	-	0.000%	0.2	0.020%	0.2	0.020%
27	1,019	-	0.000%	0.2	0.022%	0.2	0.020%
28	1,058	1	0.095%	0.2	0.023%	0.2	0.022%
29	1,130	-	0.000%	0.3	0.025%	0.3	0.023%
30	1,091	1	0.092%	0.3	0.029%	0.3	0.025%
31	1,103	1	0.091%	0.4	0.033%	0.3	0.029%
32	1,158	1	0.086%	0.4	0.037%	0.4	0.033%
33	1,139	-	0.000%	0.5	0.041%	0.4	0.037%
34	1,294	-	0.000%	0.6	0.044%	0.5	0.041%
35	1,388	-	0.000%	0.7	0.047%	0.6	0.044%
36	1,524	-	0.000%	0.8	0.051%	0.7	0.047%
37	1,561	1	0.064%	0.8	0.054%	0.8	0.051%
38	1,549	-	0.000%	0.9	0.058%	0.8	0.054%
39	1,537	1	0.065%	1.0	0.064%	0.9	0.058%
40	1,623	-	0.000%	1.1	0.070%	1.0	0.064%
41	1,681	1	0.059%	1.3	0.077%	1.2	0.070%
42	1,886	2	0.106%	1.6	0.084%	1.4	0.077%
43	2,048	2	0.098%	1.9	0.093%	1.7	0.084%
44	2,158	2	0.093%	2.2	0.100%	2.0	0.093%
45	2,305	3	0.130%	2.5	0.108%	2.3	0.100%
46	2,453	3	0.122%	2.9	0.117%	2.7	0.108%
47	2,617	4	0.153%	3.3	0.126%	3.1	0.117%
48	2,799	4	0.143%	3.8	0.136%	3.5	0.126%
49	2,842	3	0.106%	4.2	0.149%	3.9	0.136%
50	2,912	2	0.069%	4.7	0.162%	4.3	0.149%
51	2,970	6	0.202%	5.3	0.178%	4.8	0.162%
52	3,030	4	0.132%	5.9	0.196%	5.4	0.178%
53	3,089	6	0.194%	6.7	0.216%	6.1	0.196%
54	3,075	5	0.163%	7.3	0.239%	6.7	0.216%
55	2,994	3	0.100%	7.9	0.264%	7.1	0.239%
56	2,761	8	0.290%	8.0	0.291%	7.3	0.264%
57	2,611	8	0.306%	8.3	0.318%	7.6	0.291%
58	2,485	8	0.322%	8.6	0.347%	7.9	0.318%
59	2,301	8	0.348%	8.7	0.380%	8.0	0.347%
60	2,058	10	0.486%	8.5	0.414%	7.8	0.380%
61	1,797	5	0.278%	8.1	0.450%	7.4	0.414%
62	1,546	5	0.323%	7.5	0.487%	6.9	0.450%
63	1,206	9	0.746%	6.3	0.524%	5.9	0.487%
64	1,044	-	0.000%	5.9	0.562%	5.5	0.524%
	76,776	119	0.155%	140.1	0.182%	128.4	0.167%

Data Summary C-15
Probability of Death - Active Members
Females - Other Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	1,943	1	0.051%	0.7	0.034%	0.5	0.026%
26	2,030	-	0.000%	0.7	0.034%	0.6	0.028%
27	2,093	1	0.048%	0.7	0.035%	0.6	0.029%
28	2,124	-	0.000%	0.8	0.036%	0.6	0.030%
29	2,063	-	0.000%	0.8	0.037%	0.6	0.031%
30	2,104	-	0.000%	0.8	0.038%	0.7	0.032%
31	2,166	-	0.000%	0.9	0.040%	0.7	0.034%
32	2,118	-	0.000%	0.9	0.043%	0.7	0.034%
33	2,196	1	0.046%	1.1	0.048%	0.8	0.035%
34	2,236	-	0.000%	1.2	0.054%	0.8	0.036%
35	2,383	1	0.042%	1.5	0.061%	0.9	0.037%
36	2,500	-	0.000%	1.7	0.068%	0.9	0.038%
37	2,556	1	0.039%	1.9	0.075%	1.0	0.040%
38	2,600	-	0.000%	2.1	0.081%	1.1	0.043%
39	2,529	-	0.000%	2.2	0.087%	1.2	0.048%
40	2,635	2	0.076%	2.4	0.092%	1.4	0.054%
41	2,809	1	0.036%	2.7	0.097%	1.7	0.061%
42	3,023	1	0.033%	3.1	0.102%	2.0	0.068%
43	3,268	3	0.092%	3.5	0.107%	2.4	0.075%
44	3,545	-	0.000%	4.0	0.113%	2.9	0.081%
45	3,785	2	0.053%	4.6	0.120%	3.3	0.087%
46	4,044	4	0.099%	5.2	0.128%	3.7	0.092%
47	4,118	1	0.024%	5.7	0.138%	4.0	0.097%
48	4,219	4	0.095%	6.2	0.146%	4.3	0.102%
49	4,225	1	0.024%	6.6	0.156%	4.5	0.107%
50	4,250	5	0.118%	7.1	0.166%	4.8	0.113%
51	4,311	-	0.000%	7.6	0.177%	5.2	0.120%
52	4,197	6	0.143%	7.9	0.188%	5.4	0.128%
53	4,205	4	0.095%	8.4	0.200%	5.8	0.138%
54	4,111	4	0.097%	8.7	0.213%	6.0	0.146%
55	3,878	1	0.026%	8.8	0.228%	6.0	0.156%
56	3,664	6	0.164%	8.9	0.244%	6.1	0.166%
57	3,367	2	0.059%	8.9	0.265%	6.0	0.177%
58	3,163	11	0.348%	9.2	0.291%	6.0	0.188%
59	2,928	2	0.068%	9.4	0.322%	5.9	0.200%
60	2,640	4	0.152%	9.4	0.357%	5.6	0.213%
61	2,299	7	0.304%	9.1	0.394%	5.2	0.228%
62	1,917	3	0.156%	8.4	0.436%	4.7	0.244%
63	1,469	5	0.340%	7.1	0.484%	3.9	0.265%
64	1,274	1	0.078%	6.8	0.532%	3.7	0.291%
	116,985	85	0.073%	187.6	0.160%	122.5	0.105%

Data Summary C-16
Probability of Death - Active Members
Males - Special Services Membership

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	450	-	0.000%	0.1	0.022%	0.1	0.017%
26	535	-	0.000%	0.1	0.023%	0.1	0.018%
27	560	-	0.000%	0.1	0.025%	0.1	0.018%
28	621	-	0.000%	0.2	0.029%	0.1	0.019%
29	627	-	0.000%	0.2	0.033%	0.1	0.020%
30	661	-	0.000%	0.2	0.037%	0.1	0.020%
31	670	-	0.000%	0.3	0.041%	0.1	0.022%
32	673	-	0.000%	0.3	0.044%	0.2	0.023%
33	678	-	0.000%	0.3	0.047%	0.2	0.025%
34	740	-	0.000%	0.4	0.051%	0.2	0.029%
35	795	-	0.000%	0.4	0.054%	0.3	0.033%
36	808	-	0.000%	0.5	0.058%	0.3	0.037%
37	825	-	0.000%	0.5	0.064%	0.3	0.041%
38	808	-	0.000%	0.6	0.070%	0.4	0.044%
39	758	-	0.000%	0.6	0.077%	0.4	0.047%
40	762	-	0.000%	0.6	0.084%	0.4	0.051%
41	740	-	0.000%	0.7	0.093%	0.4	0.054%
42	729	-	0.000%	0.7	0.100%	0.4	0.058%
43	752	-	0.000%	0.8	0.108%	0.5	0.064%
44	757	-	0.000%	0.9	0.117%	0.5	0.070%
45	760	-	0.000%	1.0	0.126%	0.6	0.077%
46	748	-	0.000%	1.0	0.136%	0.6	0.084%
47	752	-	0.000%	1.1	0.149%	0.7	0.093%
48	749	-	0.000%	1.2	0.162%	0.8	0.100%
49	741	1	0.135%	1.3	0.178%	0.8	0.108%
50	724	2	0.276%	1.4	0.196%	0.8	0.117%
51	705	1	0.142%	1.5	0.216%	0.9	0.126%
52	683	1	0.146%	1.6	0.239%	0.9	0.136%
53	648	2	0.309%	1.7	0.264%	1.0	0.149%
54	642	1	0.156%	1.9	0.291%	1.0	0.162%
55	580	-	0.000%	1.8	0.318%	1.0	0.178%
56	493	1	0.203%	1.7	0.347%	1.0	0.196%
57	432	2	0.463%	1.6	0.380%	0.9	0.216%
58	402	2	0.498%	1.7	0.414%	1.0	0.239%
59	337	-	0.000%	1.5	0.450%	0.9	0.264%
60	259	-	0.000%	1.3	0.487%	0.8	0.291%
61	199	1	0.503%	1.0	0.524%	0.6	0.318%
62	159	1	0.629%	0.9	0.562%	0.6	0.347%
63	109	-	0.000%	0.7	0.599%	0.4	0.380%
64	77	-	0.000%	0.5	0.636%	0.3	0.414%
65	59	-	0.000%	0.4	0.671%	0.3	0.450%
	24,207	15	0.062%	35.5	0.147%	21.0	0.087%

APPENDIX D

RETIREMENT

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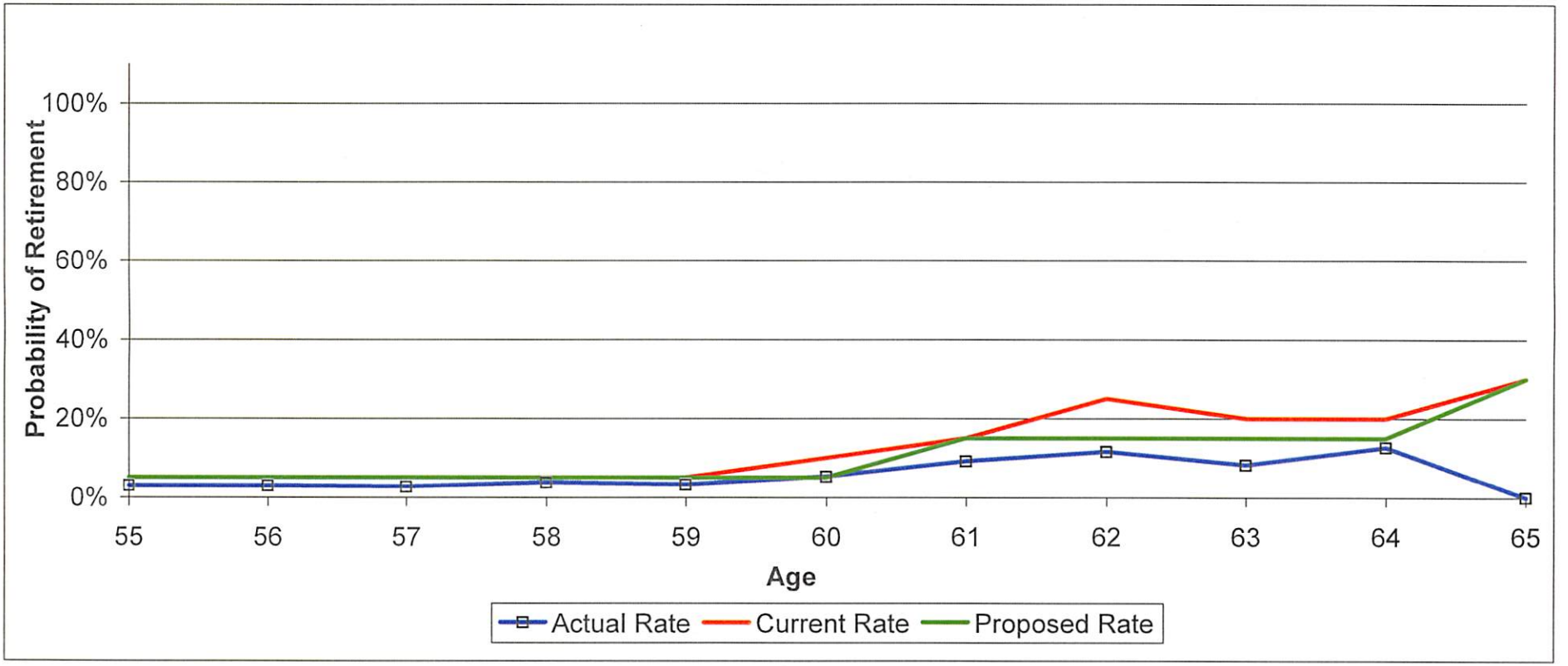
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-1

Retirement Rates - Early

State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	681	1,182	1,015
Actual/Expected		58%	67%

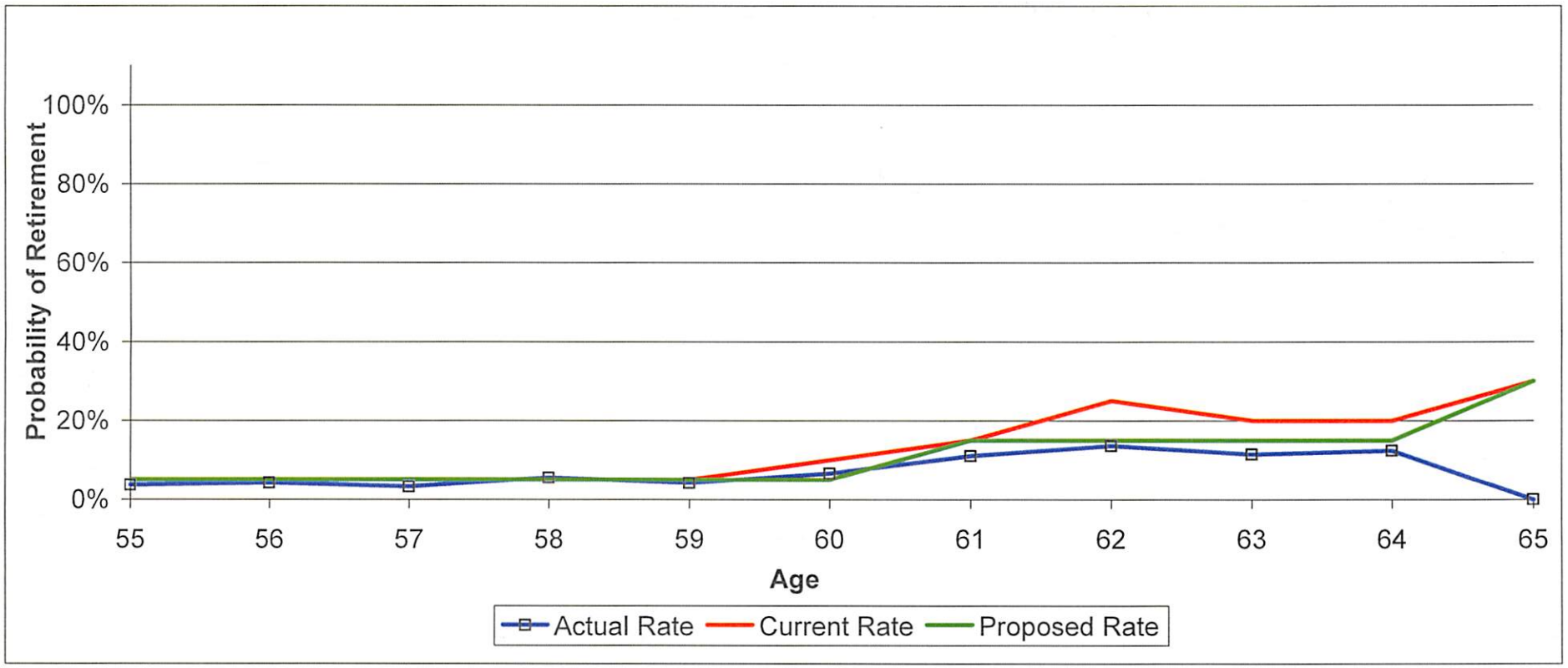
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-2

Retirement Rates - Early

State Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	6,779	9,034	8,025
Actual/Expected		75%	84%

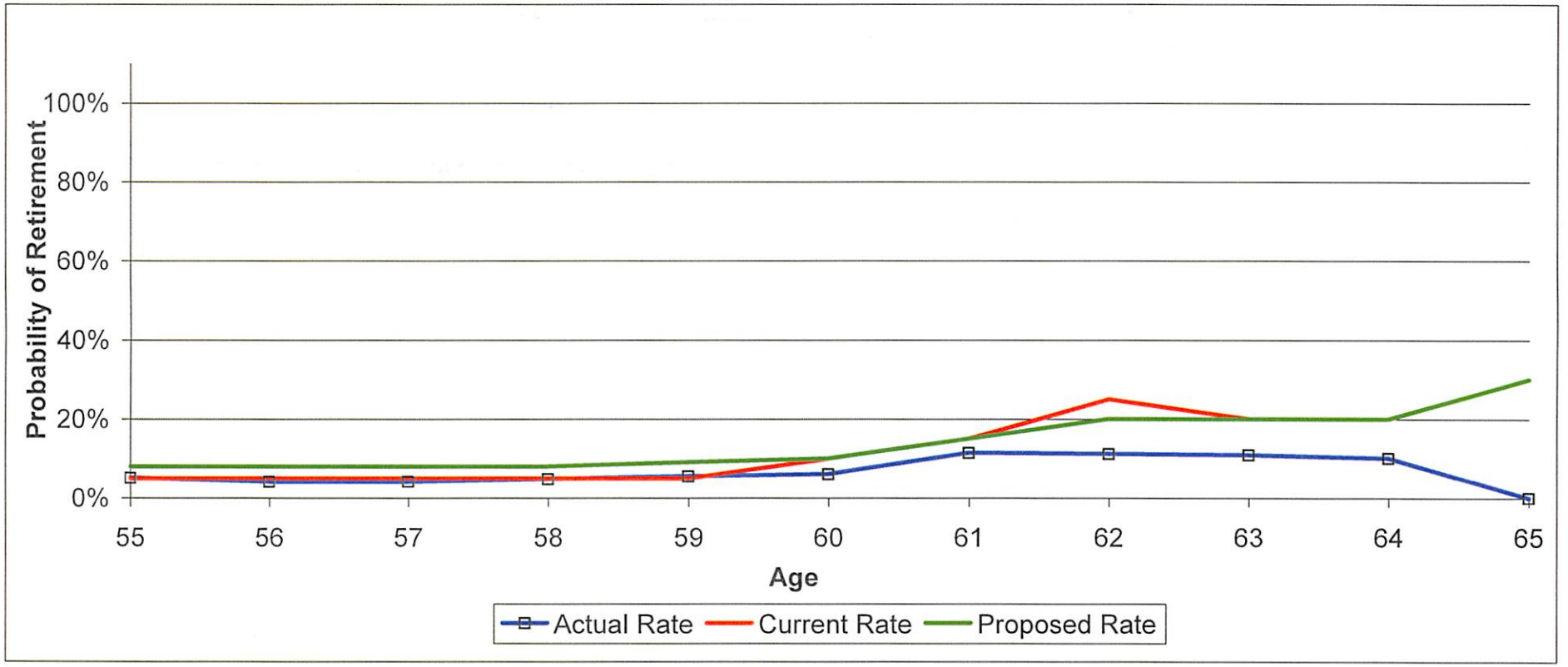
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-3

Retirement Rates - Early

School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	3,366	4,514	5,656
Actual/Expected		75%	60%

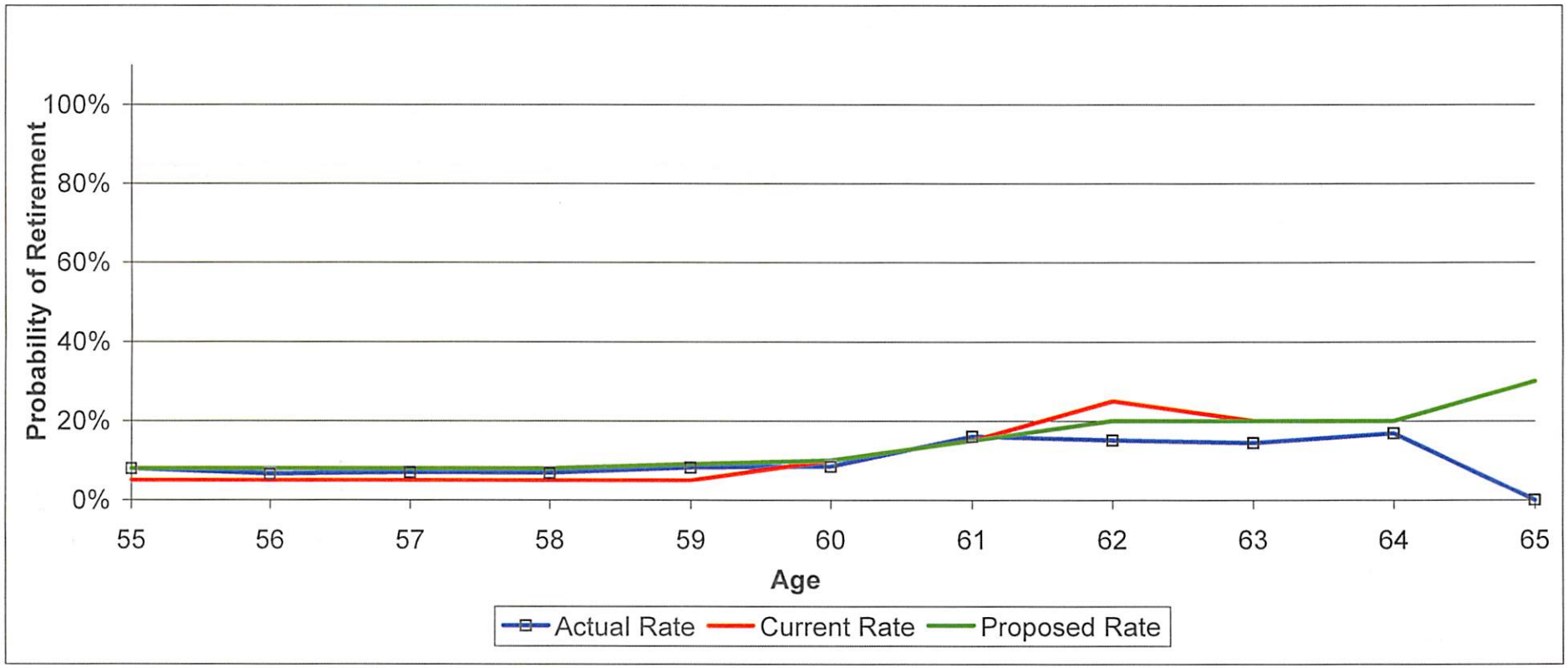
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-4

Retirement Rates - Early

School Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	24,912	20,012	27,628
Actual/Expected		124%	90%

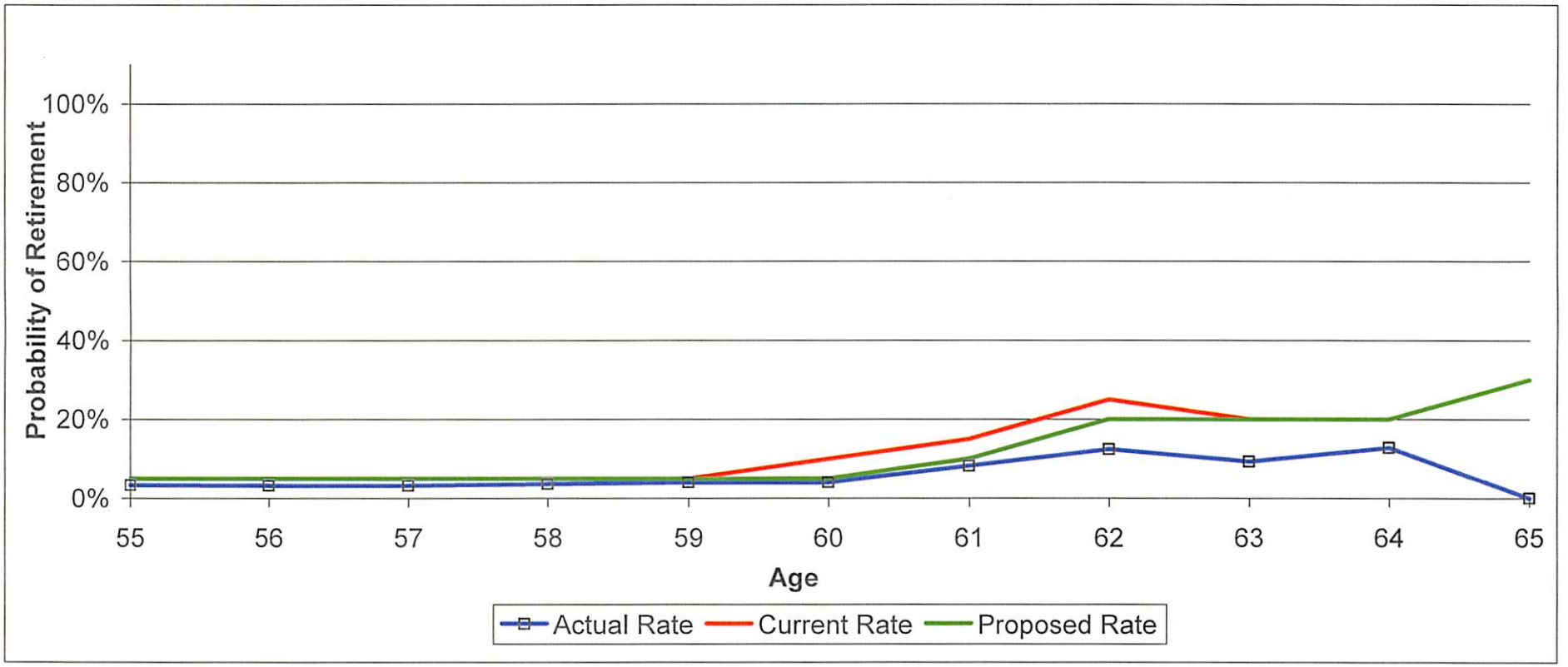
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-5

Retirement Rates - Early

Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	2,033	3,499	3,023
Actual/Expected		58%	67%

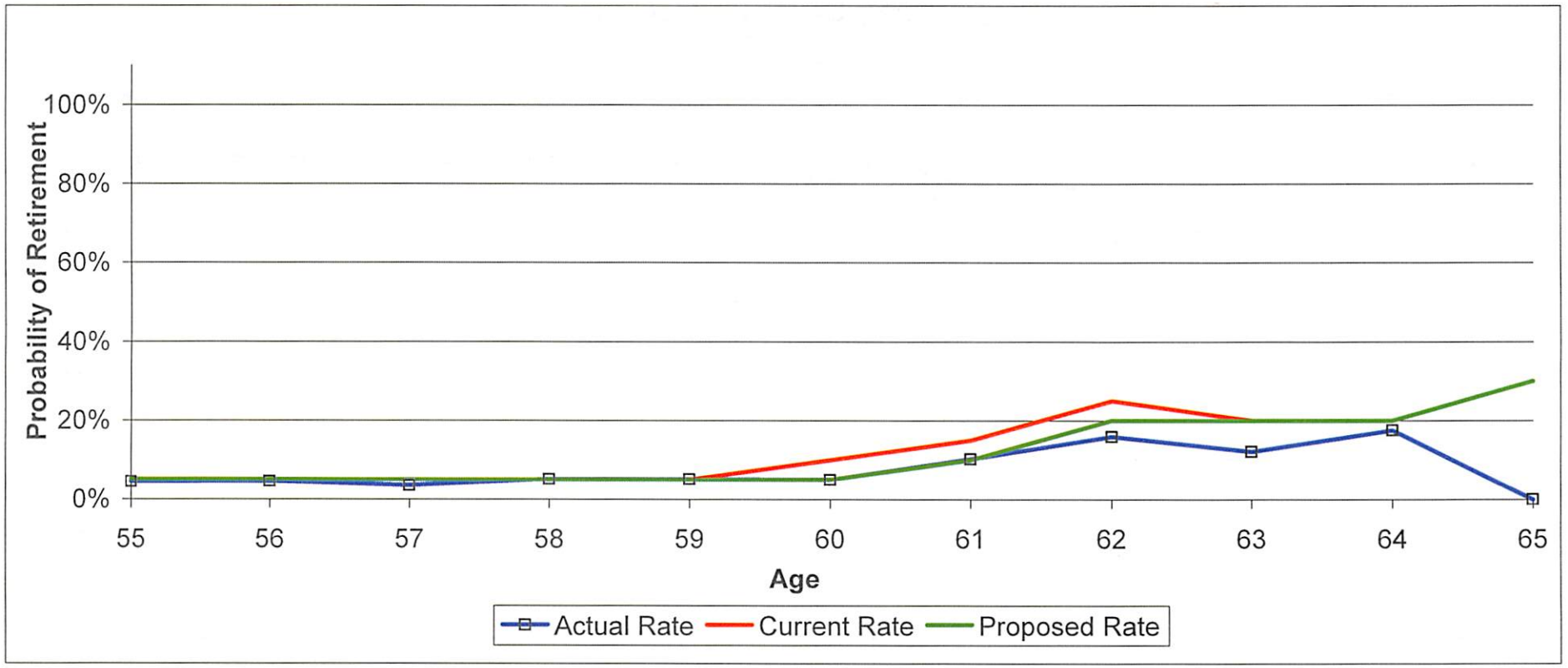
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-6

Retirement Rates - Early

Other Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	11,045	14,254	12,423
Actual/Expected		77%	89%

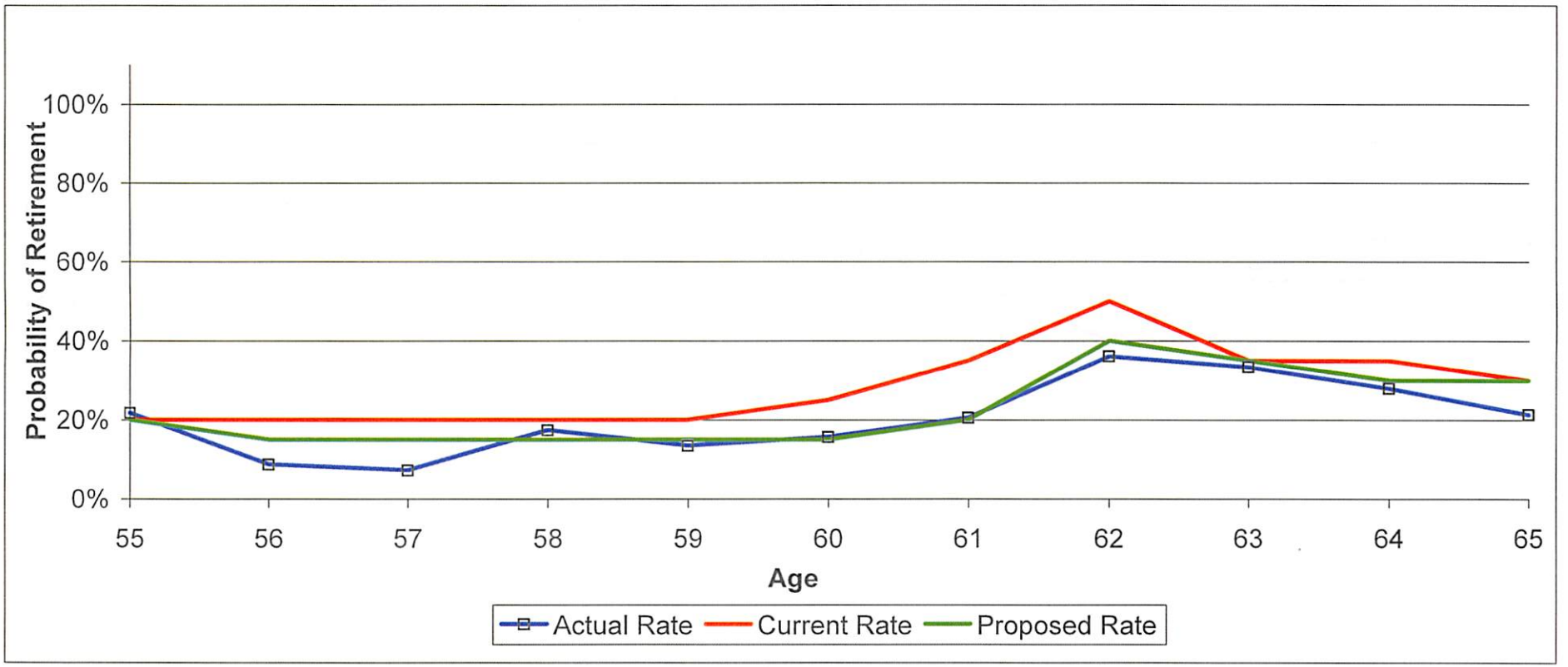
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-7

Retirement Rates - Select Unreduced

State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	320	461	377
Actual/Expected		69%	85%

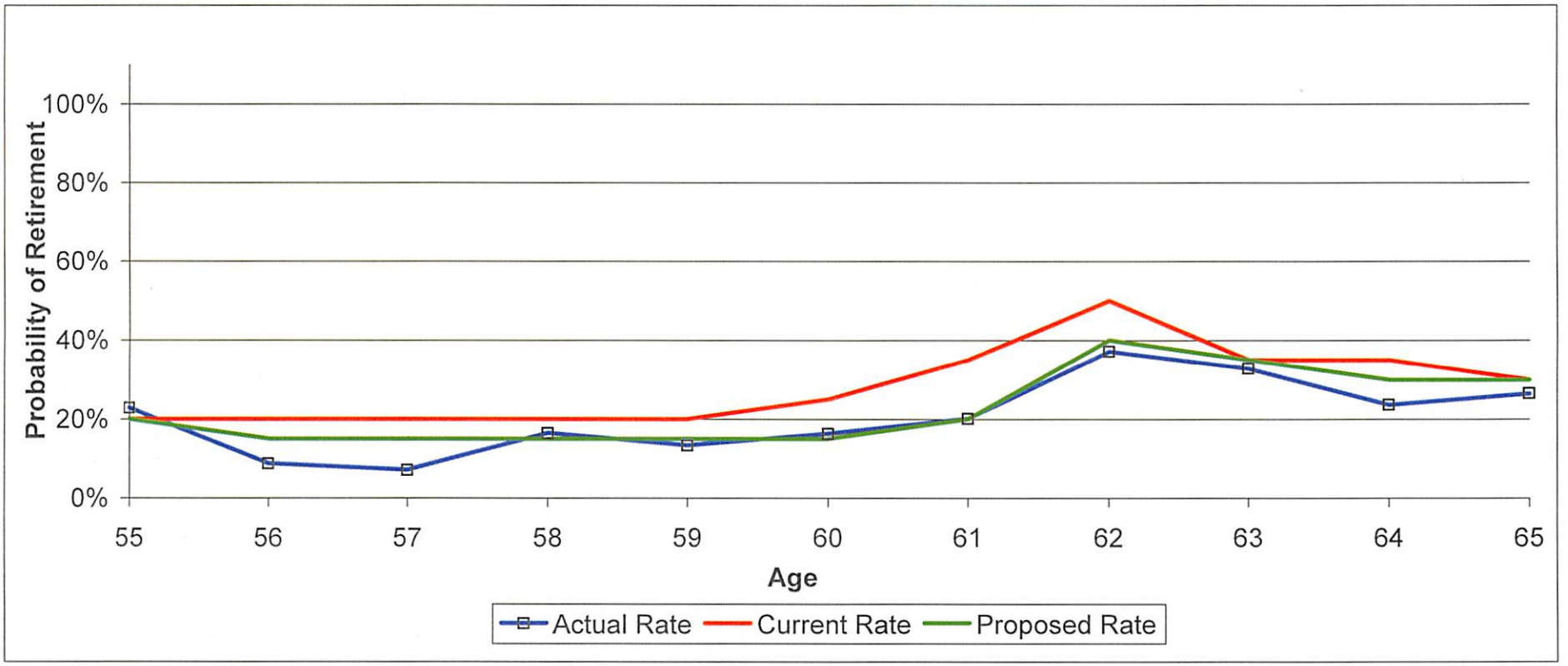
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-8

Retirement Rates - Select Unreduced

State Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	4,358	6,345	4,985
Actual/Expected		69%	87%

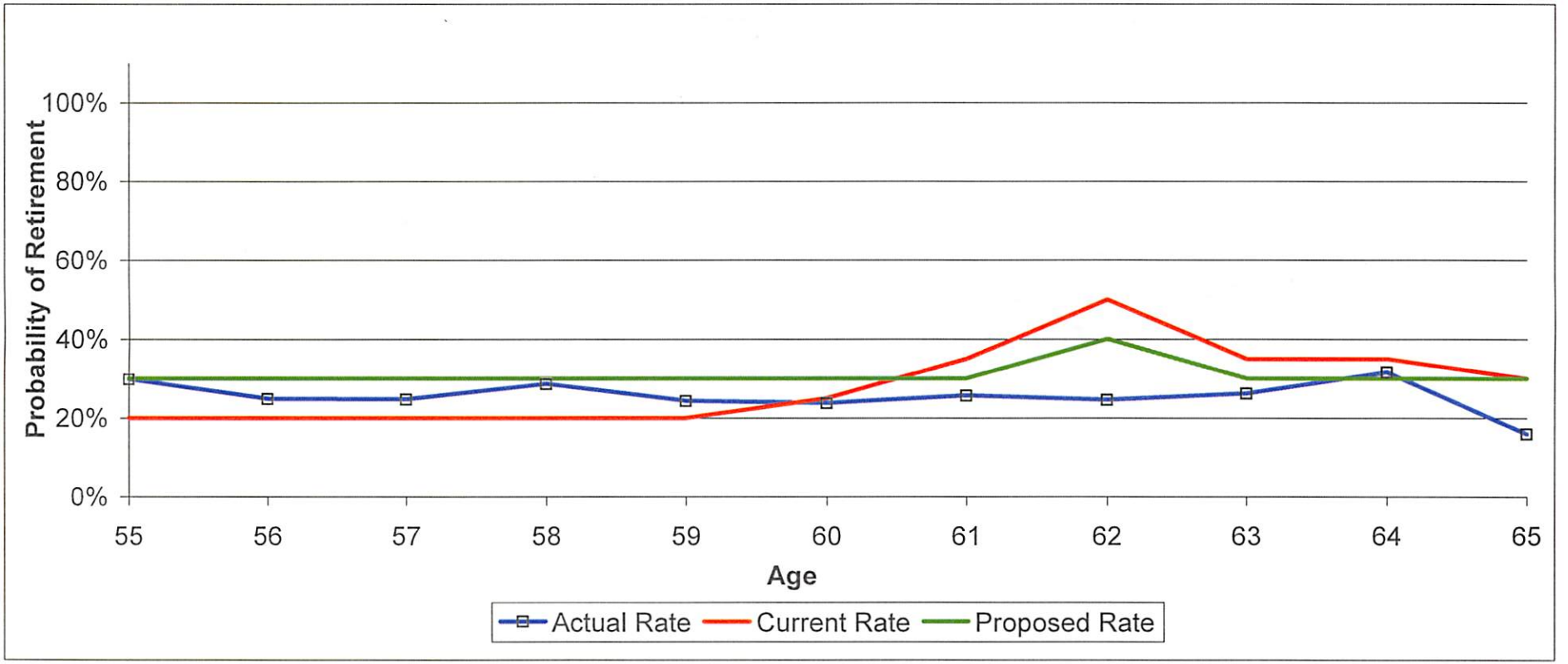
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-9

Retirement Rates - Select Unreduced

School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,576	1,702	2,019
Actual/Expected		93%	78%

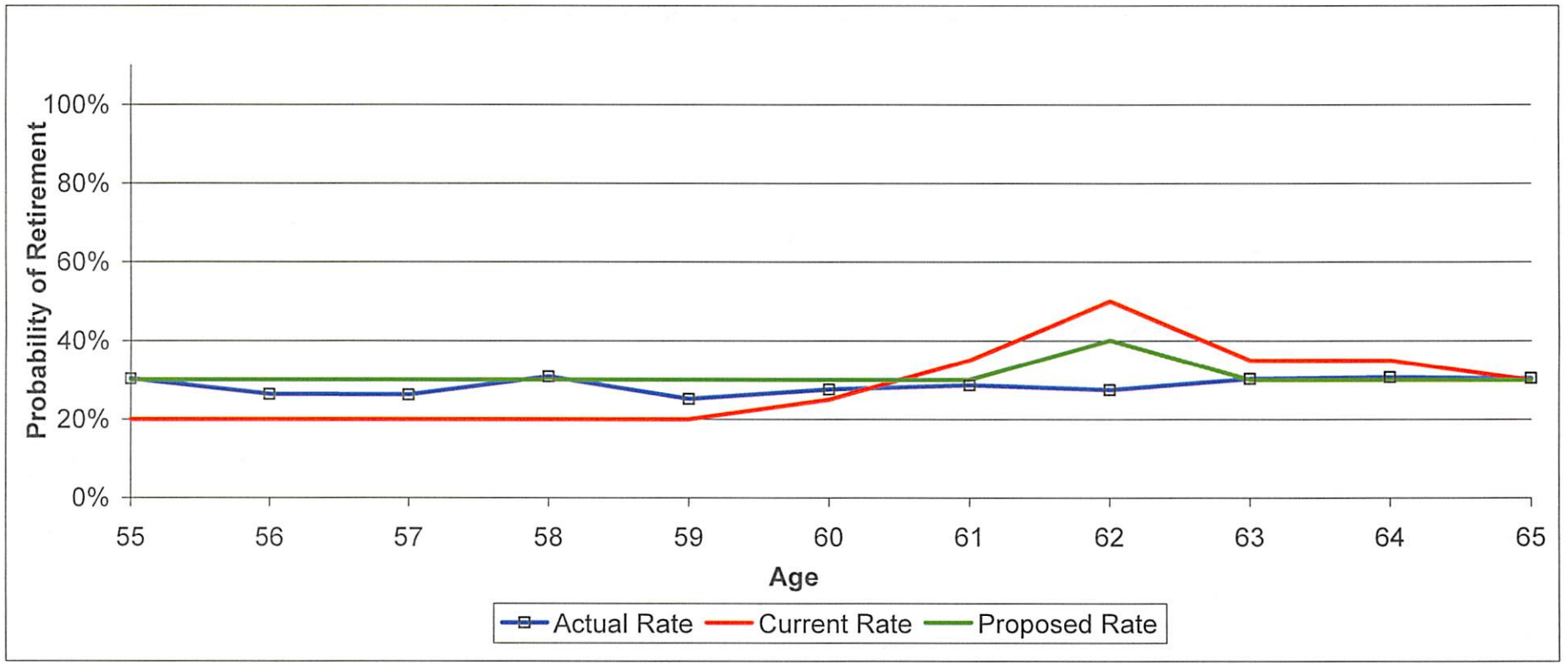
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-10

Retirement Rates - Select Unreduced

School Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	21,671	17,680	23,485
Actual/Expected		123%	92%

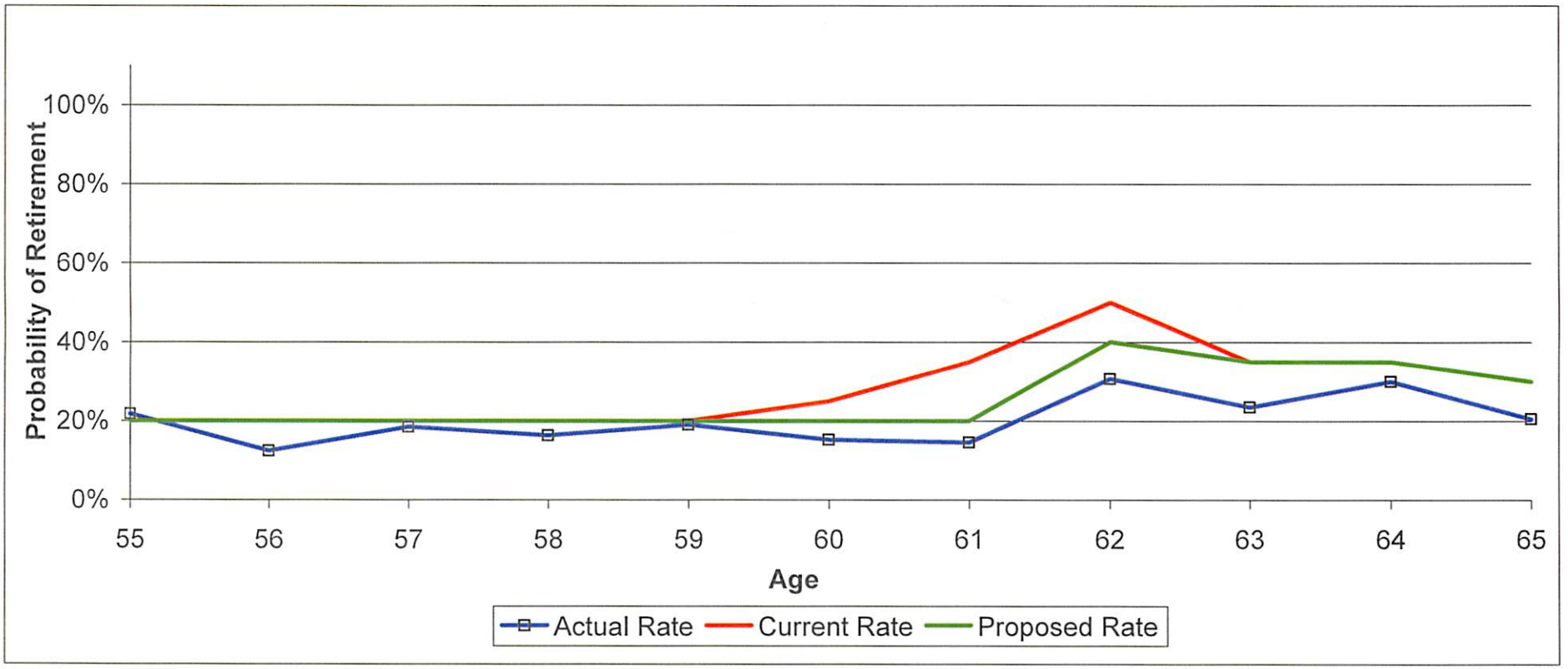
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-11

Retirement Rates - Select Unreduced

Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	729	1,029	967
Actual/Expected		71%	75%

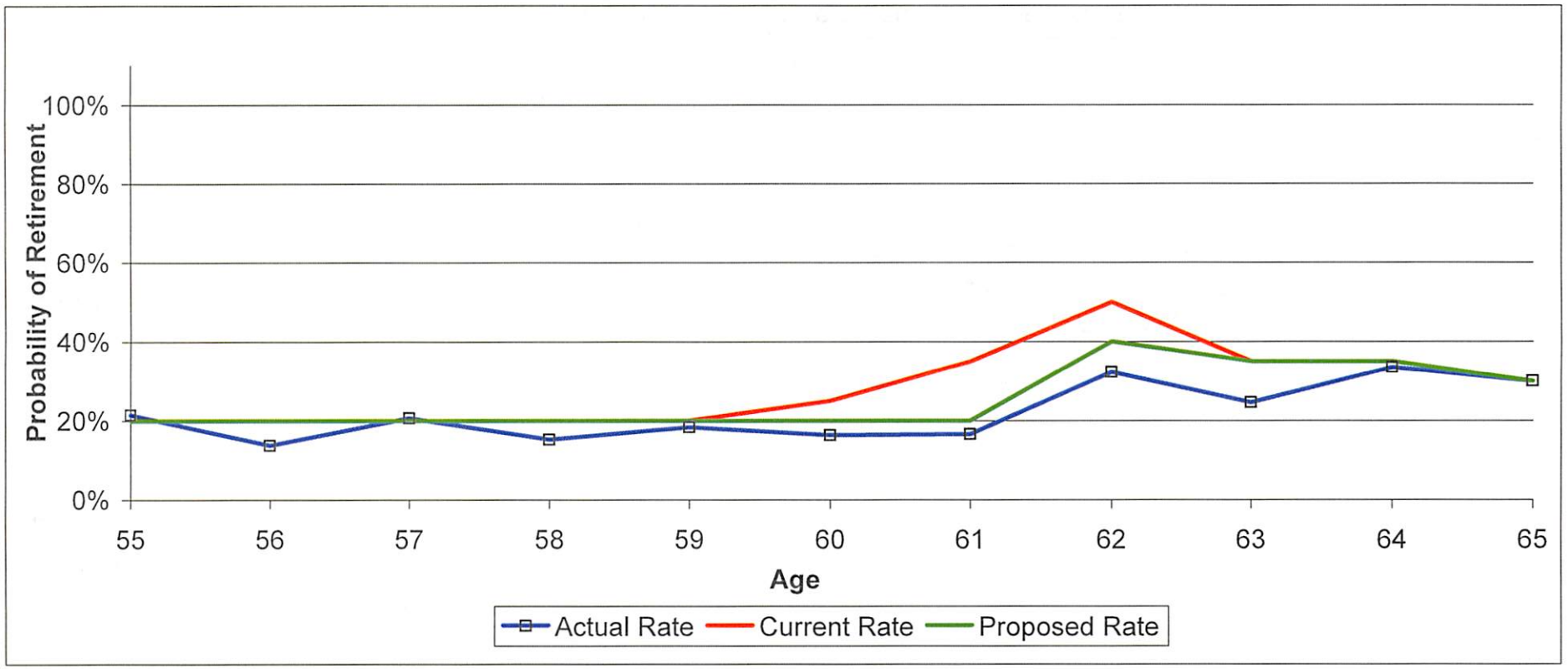
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-12

Retirement Rates - Select Unreduced

Other Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	6,632	8,257	7,559
Actual/Expected		80%	88%

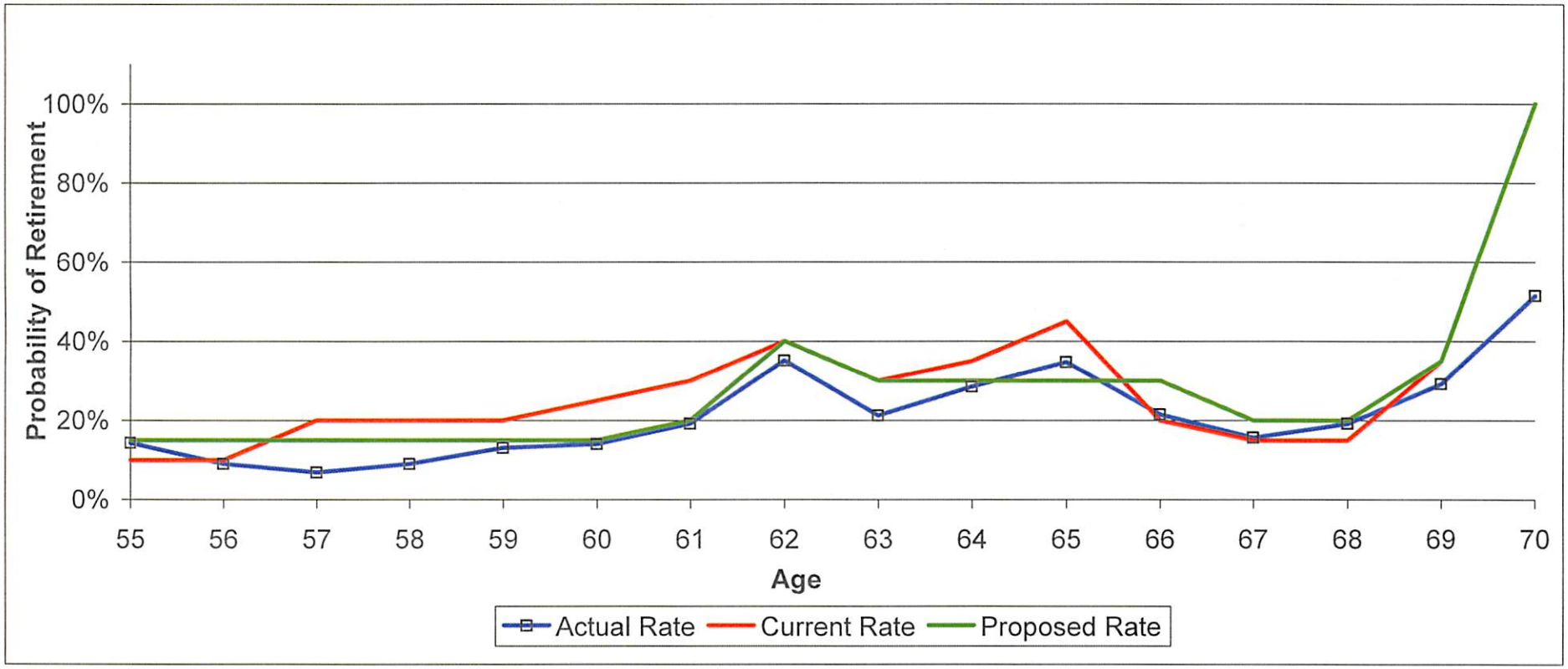
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-13

Retirement Rates - Ultimate Unreduced

State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,117	1,538	1,381
Actual/Expected		73%	81%

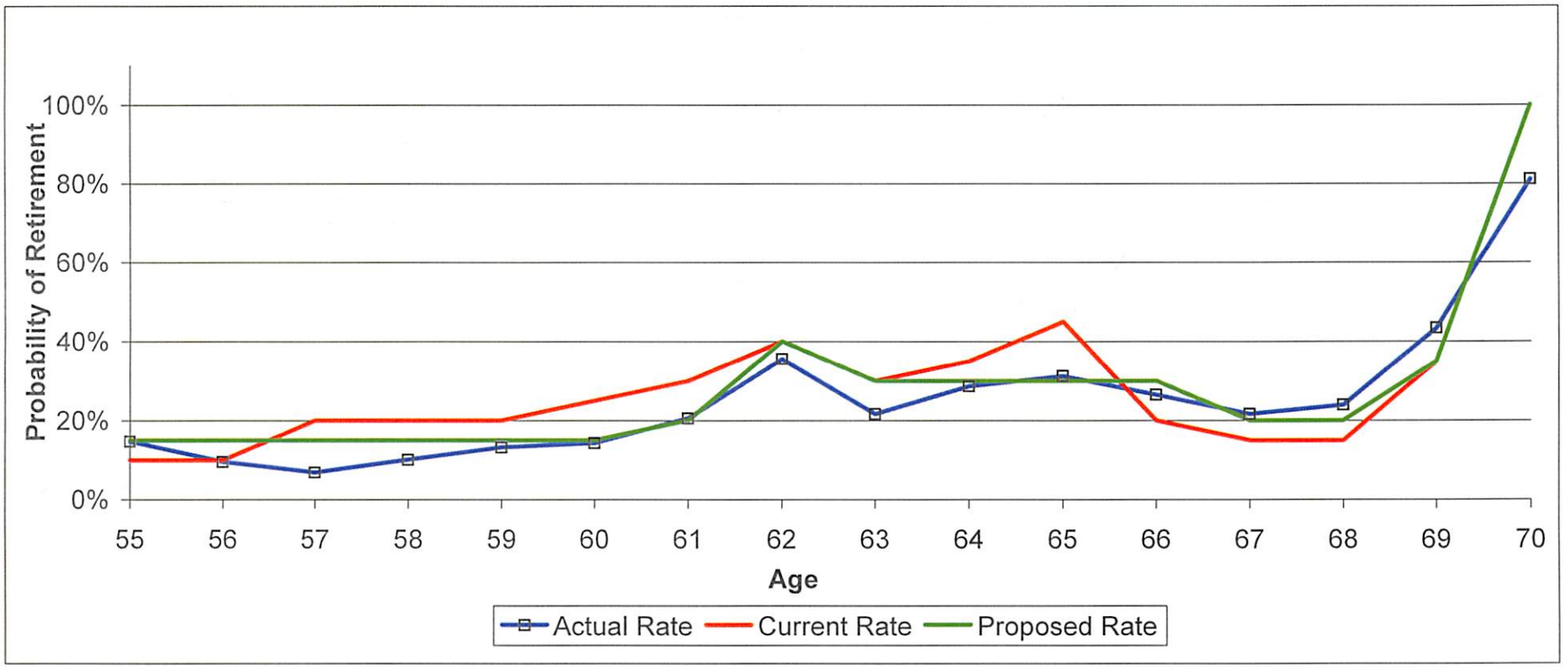
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-14

Retirement Rates - Ultimate Unreduced

State Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	16,749	22,570	19,267
Actual/Expected		74%	87%

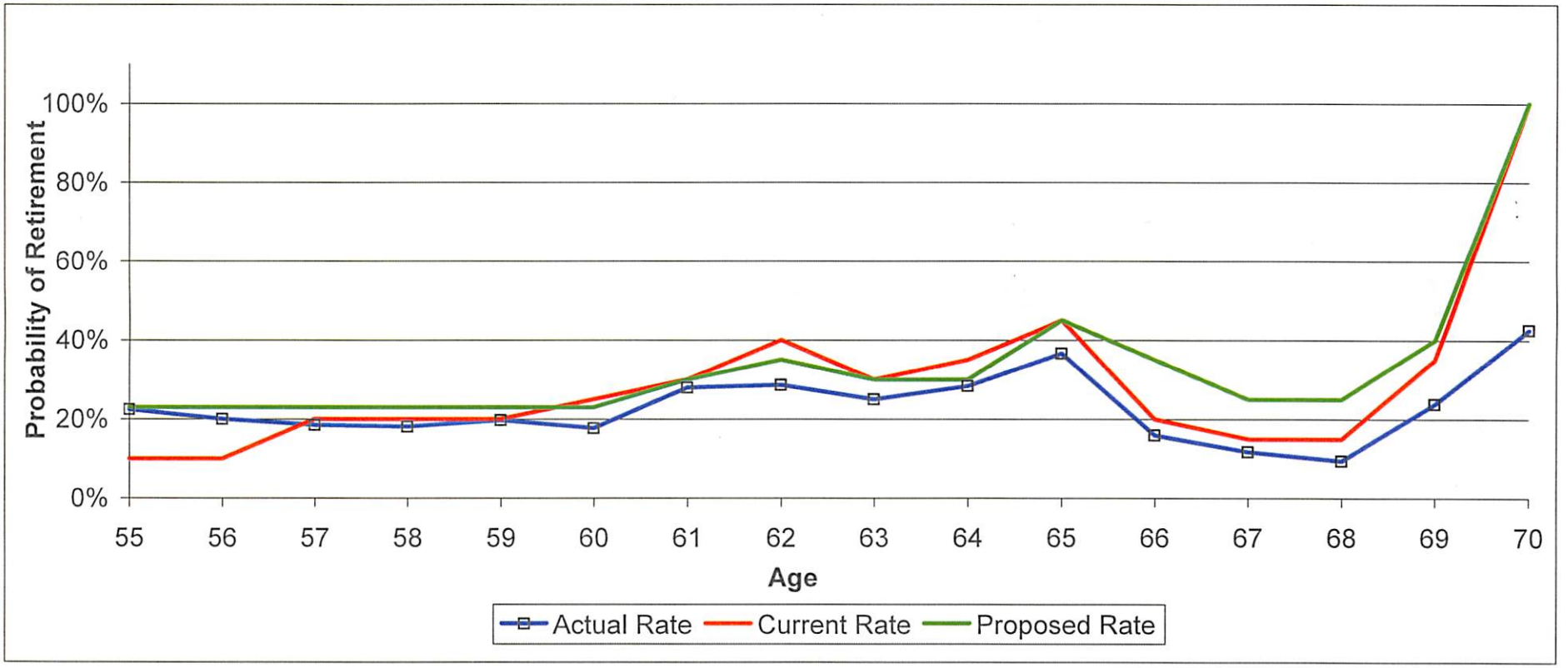
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-15

Retirement Rates - Ultimate Unreduced

School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	3,805	5,033	5,705
Actual/Expected		76%	67%

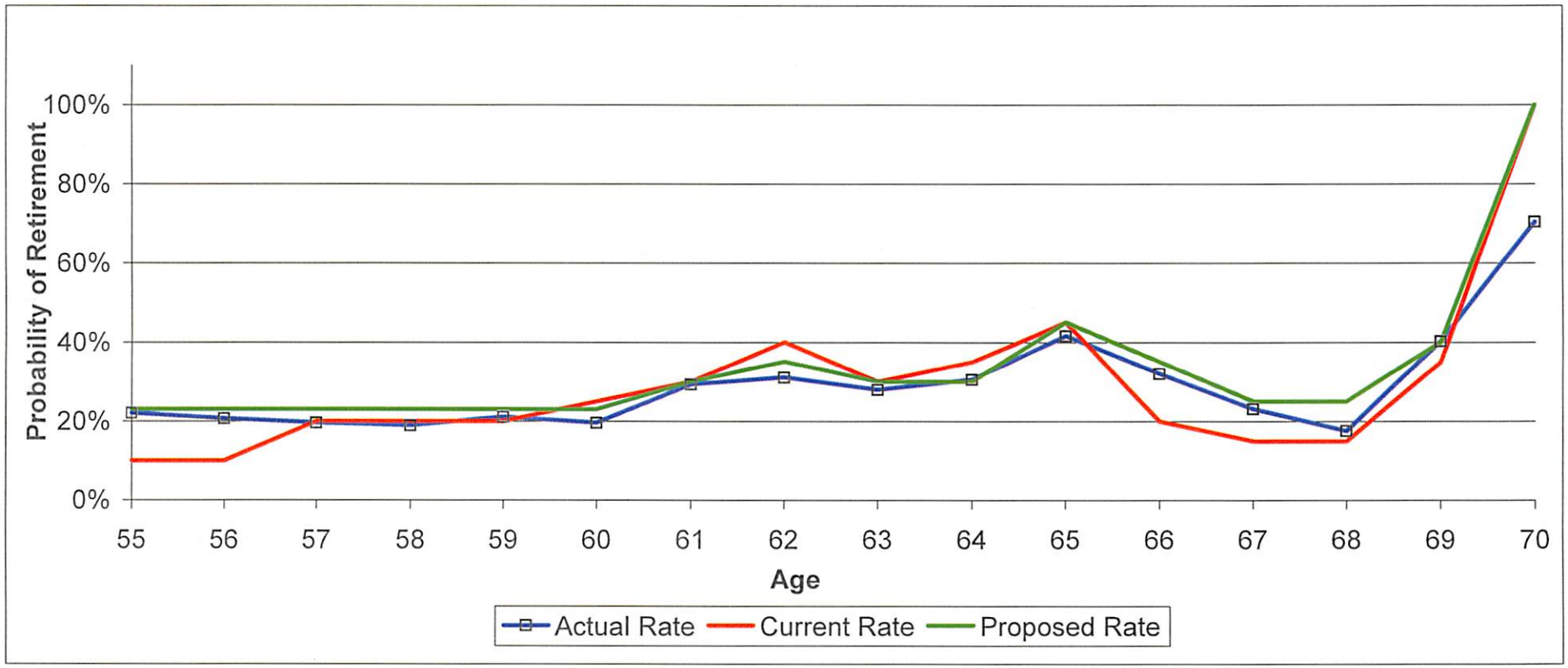
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-16

Retirement Rates - Ultimate Unreduced

School Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	45,403	47,192	50,741
Actual/Expected		96%	89%

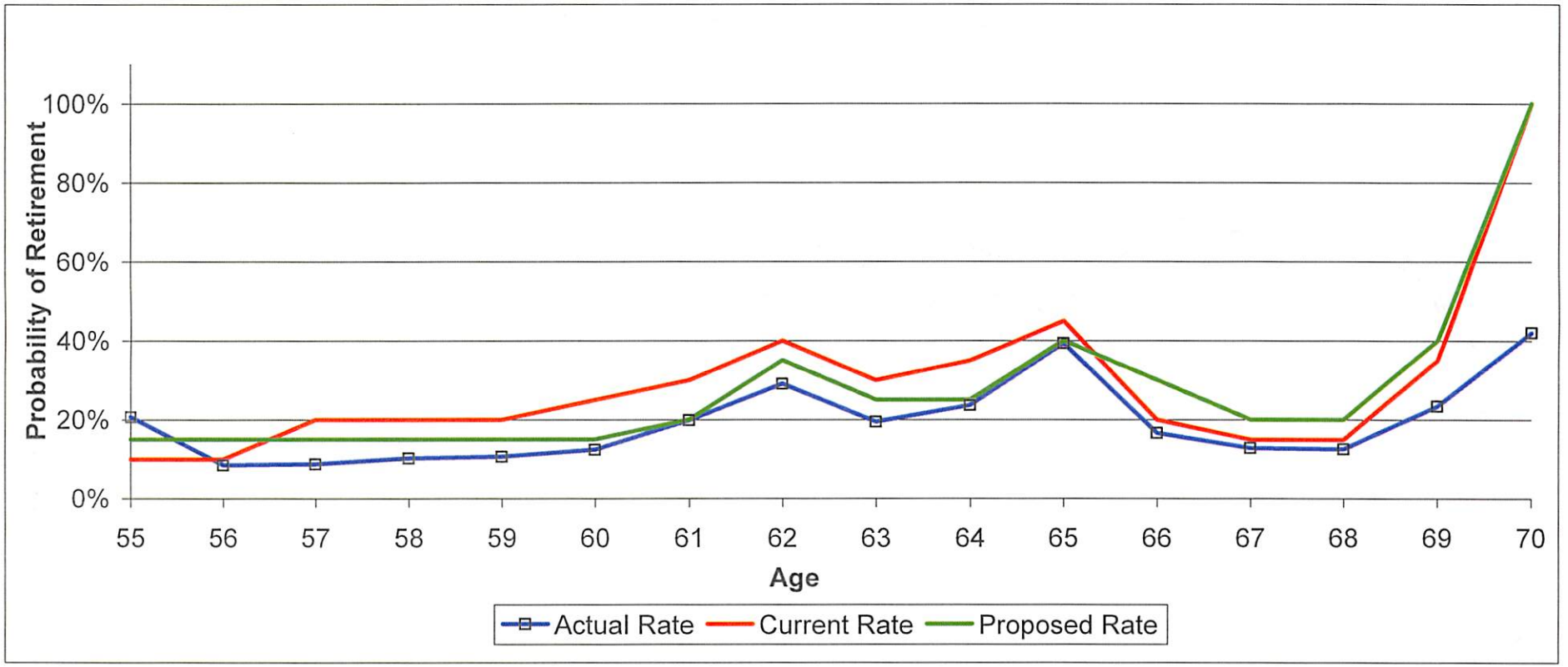
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-17

Retirement Rates - Ultimate Unreduced

Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	2,122	3,266	3,229
Actual/Expected		65%	66%

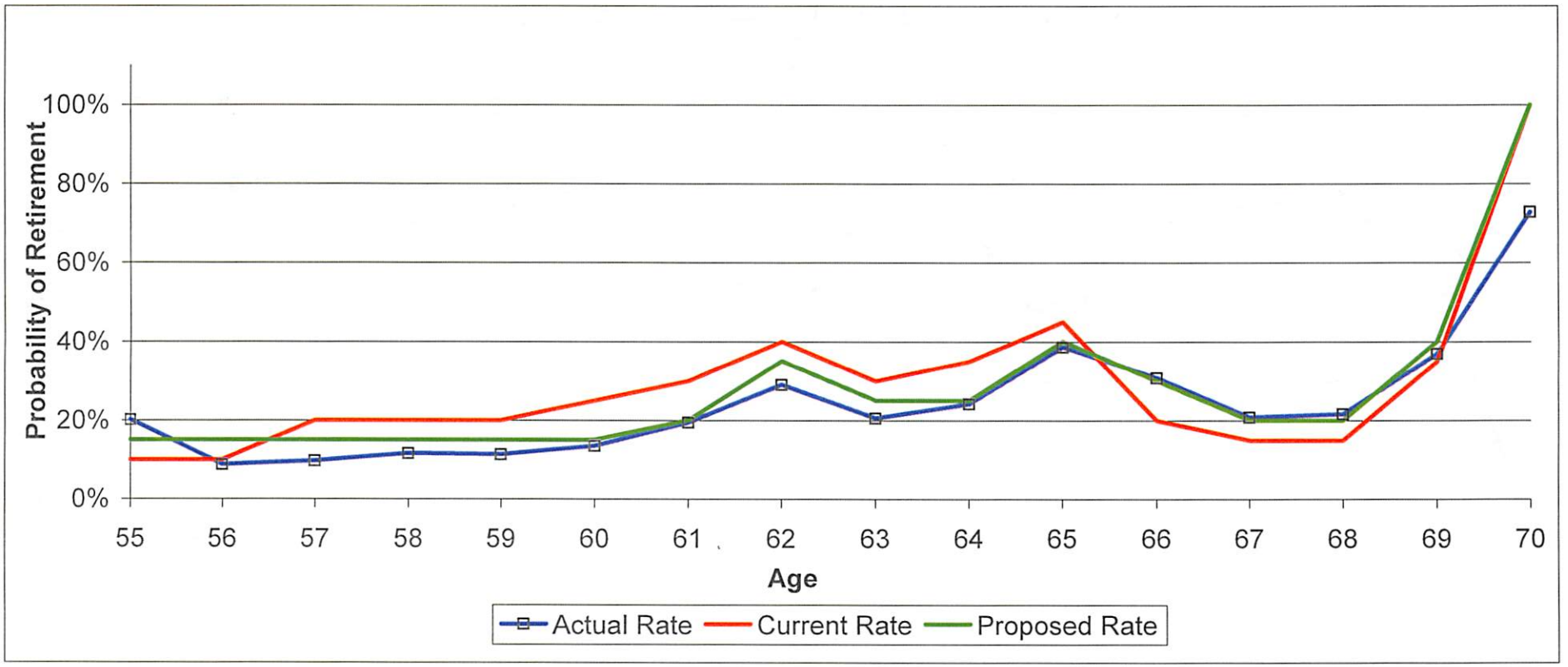
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-18

Retirement Rates - Ultimate Unreduced

Other Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	18,652	24,972	21,329
Actual/Expected		75%	87%

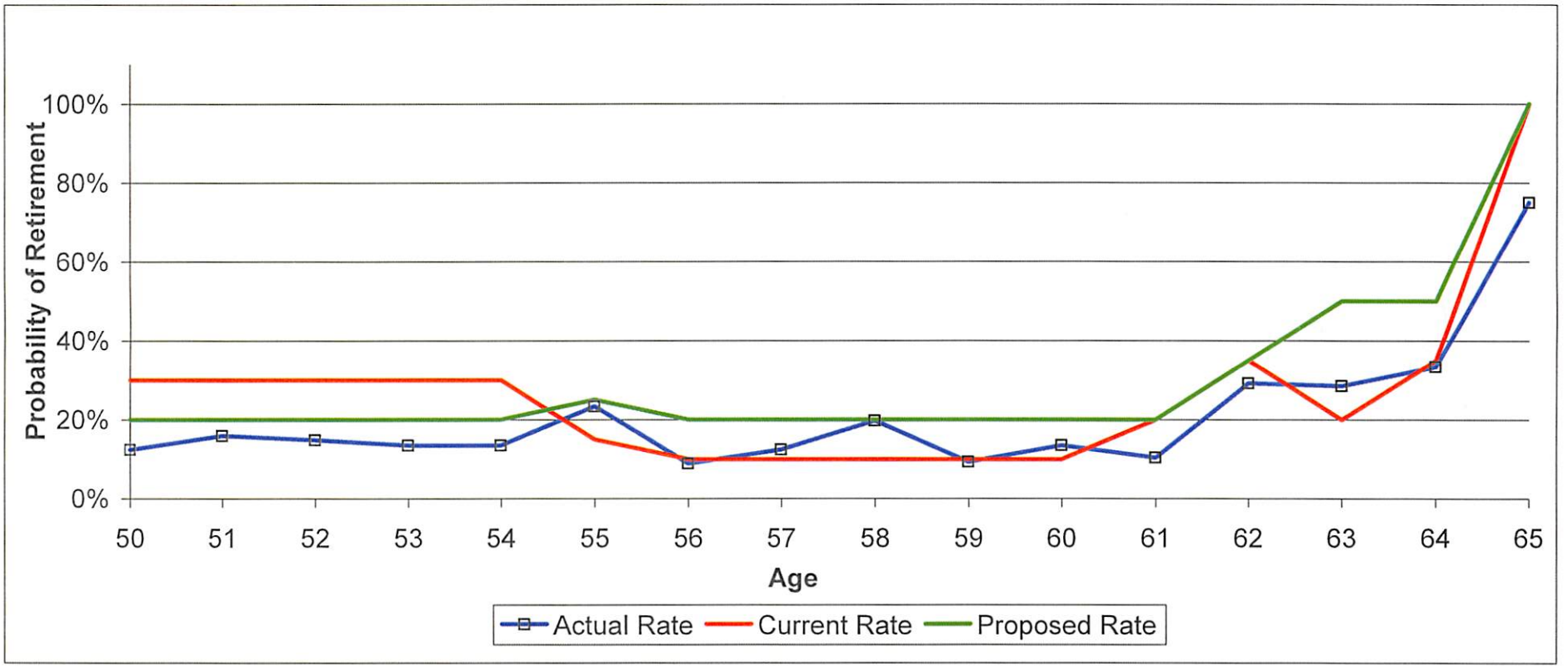
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-19

Retirement Rates

Special Services Group 1



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	171	245	240
Actual/Expected		70%	71%

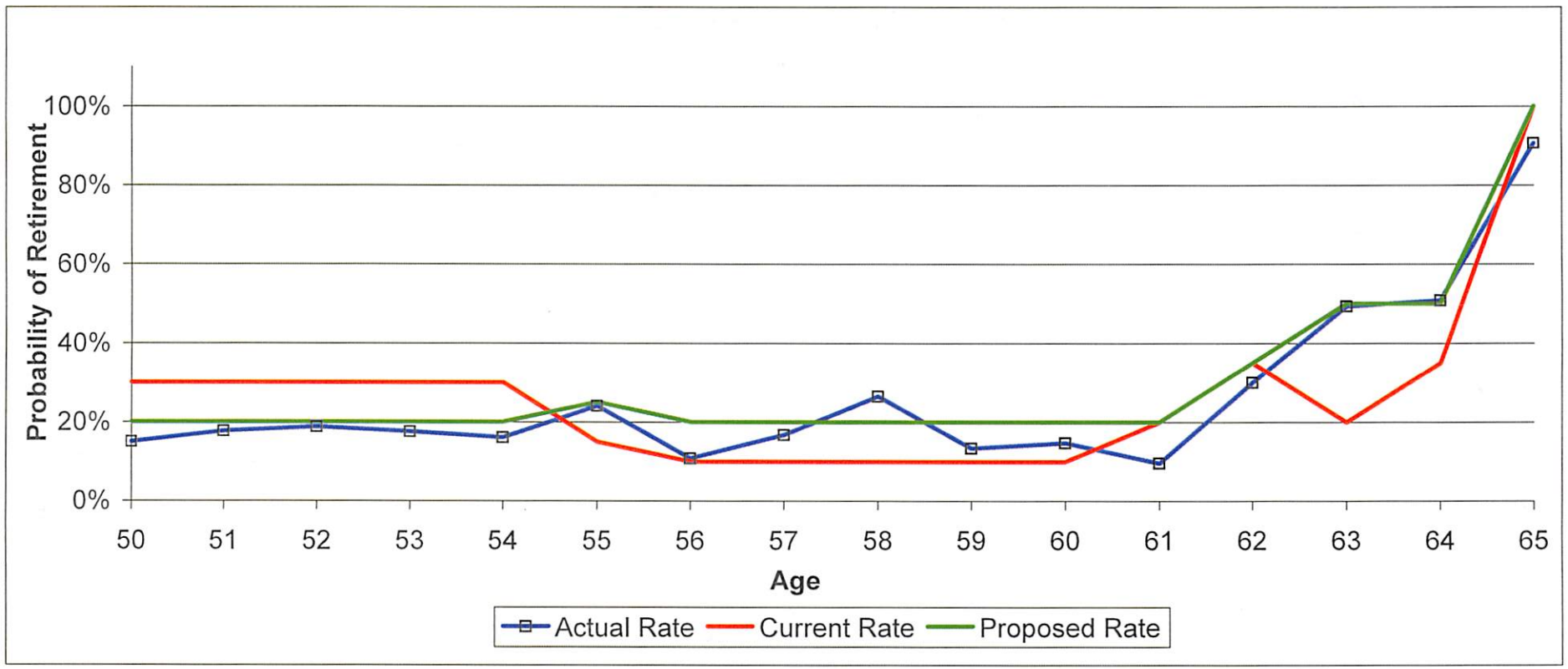
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-20

Retirement Rates

Special Services Group 1 (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	2,627	3,149	3,061
Actual/Expected		83%	86%

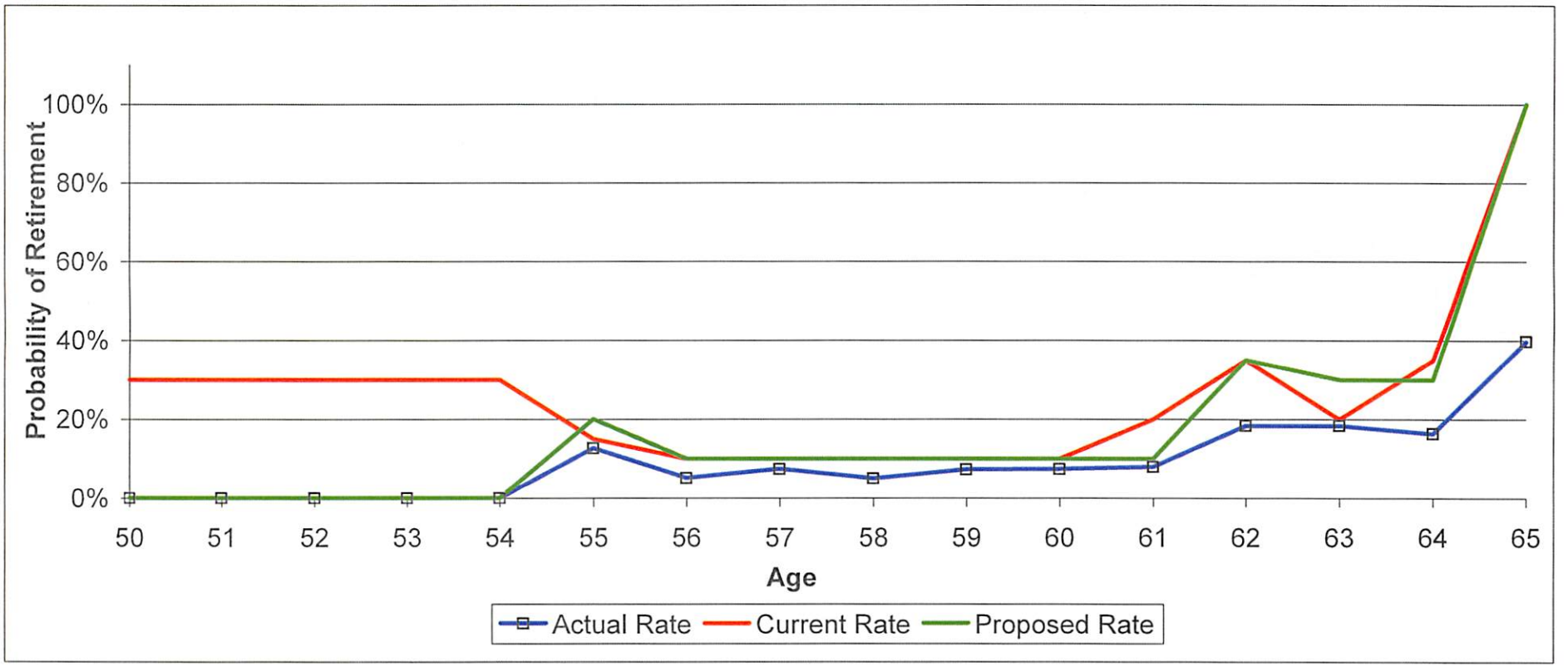
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-21

Retirement Rates

Special Services Group 2



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	332	549	564
Actual/Expected		60%	59%

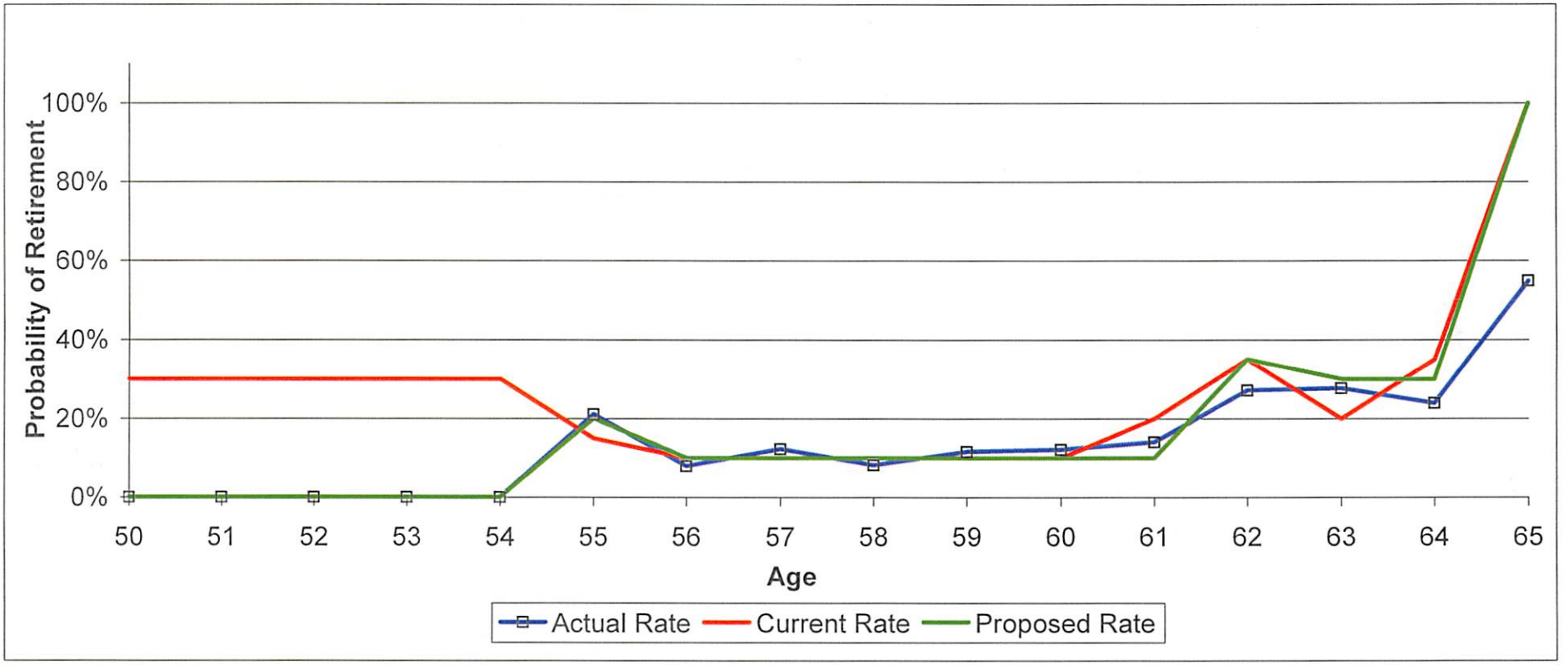
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit D-22

Retirement Rates

Special Services Group 2 (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	3,799	3,871	4,018
Actual/Expected		98%	95%

Data Summary D-1
Retirement Rates - Early
State Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	2,803	85	3.0%	140.2	5.0%	140.2	5.0%
56	2,515	75	3.0%	125.8	5.0%	125.8	5.0%
57	2,251	60	2.7%	112.6	5.0%	112.6	5.0%
58	1,977	76	3.8%	98.9	5.0%	98.9	5.0%
59	1,740	56	3.2%	87.0	5.0%	87.0	5.0%
60	1,412	74	5.2%	141.2	10.0%	70.6	5.0%
61	1,166	107	9.2%	174.9	15.0%	174.9	15.0%
62	559	65	11.6%	139.8	25.0%	83.9	15.0%
63	447	37	8.3%	89.4	20.0%	67.1	15.0%
64	361	46	12.7%	72.2	20.0%	54.2	15.0%
65	-	-	0.0%	-	30.0%	-	30.0%
	15,231	681	4.5%	1,181.8	7.8%	1,014.9	6.7%

Data Summary D-2
Retirement Rates - Early
State Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	28,634	1,026	3.6%	1,431.7	5.0%	1,431.7	5.0%
56	24,310	1,034	4.3%	1,215.5	5.0%	1,215.5	5.0%
57	20,557	679	3.3%	1,027.8	5.0%	1,027.8	5.0%
58	16,993	944	5.6%	849.6	5.0%	849.6	5.0%
59	14,266	605	4.2%	713.3	5.0%	713.3	5.0%
60	11,208	749	6.7%	1,120.8	10.0%	560.4	5.0%
61	8,525	946	11.1%	1,278.7	15.0%	1,278.7	15.0%
62	2,654	362	13.6%	663.6	25.0%	398.2	15.0%
63	2,024	233	11.5%	404.8	20.0%	303.6	15.0%
64	1,641	203	12.4%	328.1	20.0%	246.1	15.0%
65	-	-	0.0%	-	30.0%	-	30.0%
	130,812	6,779	5.2%	9,034.0	6.9%	8,025.0	6.1%

Data Summary D-3
Retirement Rates - Early
School Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	10,372	535	5.2%	518.6	5.0%	829.8	8.0%
56	8,838	368	4.2%	441.9	5.0%	707.0	8.0%
57	7,847	329	4.2%	392.4	5.0%	627.8	8.0%
58	7,023	338	4.8%	351.2	5.0%	561.8	8.0%
59	6,083	337	5.5%	304.2	5.0%	547.5	9.0%
60	4,907	298	6.1%	490.7	10.0%	490.7	10.0%
61	4,140	475	11.5%	621.0	15.0%	621.0	15.0%
62	2,470	276	11.2%	617.5	25.0%	494.0	20.0%
63	2,072	226	10.9%	414.4	20.0%	414.4	20.0%
64	1,812	184	10.2%	362.4	20.0%	362.4	20.0%
65	-	-	0.0%	-	30.0%	-	30.0%
	55,564	3,366	6.1%	4,514.2	8.1%	5,656.4	10.2%

Data Summary D-4
Retirement Rates - Early
School Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	79,326	6,295	7.9%	3,966.3	5.0%	6,346.1	8.0%
56	57,970	3,804	6.6%	2,898.5	5.0%	4,637.6	8.0%
57	47,114	3,309	7.0%	2,355.7	5.0%	3,769.1	8.0%
58	37,740	2,584	6.8%	1,887.0	5.0%	3,019.2	8.0%
59	30,447	2,518	8.3%	1,522.3	5.0%	2,740.2	9.0%
60	21,847	1,854	8.5%	2,184.7	10.0%	2,184.7	10.0%
61	16,745	2,688	16.1%	2,511.7	15.0%	2,511.7	15.0%
62	5,335	807	15.1%	1,333.7	25.0%	1,066.9	20.0%
63	3,834	556	14.5%	766.7	20.0%	766.7	20.0%
64	2,928	496	16.9%	585.6	20.0%	585.6	20.0%
65	-	-	0.0%	-	30.0%	-	30.0%
	303,286	24,912	8.2%	20,012.3	6.6%	27,628.0	9.1%

Data Summary D-5
Retirement Rates - Early
Other Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	6,465	215	3.3%	323.3	5.0%	323.3	5.0%
56	5,854	190	3.2%	292.7	5.0%	292.7	5.0%
57	5,277	172	3.3%	263.9	5.0%	263.9	5.0%
58	4,874	179	3.7%	243.7	5.0%	243.7	5.0%
59	4,407	176	4.0%	220.4	5.0%	220.4	5.0%
60	3,925	161	4.1%	392.5	10.0%	196.3	5.0%
61	3,343	275	8.2%	501.5	15.0%	334.3	10.0%
62	2,252	280	12.4%	563.0	25.0%	450.4	20.0%
63	1,824	171	9.4%	364.8	20.0%	364.8	20.0%
64	1,665	214	12.9%	333.0	20.0%	333.0	20.0%
65	-	-	0.0%	-	30.0%	-	30.0%
	39,886	2,033	5.1%	3,498.6	8.8%	3,022.6	7.6%

Data Summary D-6
Retirement Rates - Early
Other Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	39,619	1,773	4.5%	1,980.9	5.0%	1,980.9	5.0%
56	34,300	1,554	4.5%	1,715.0	5.0%	1,715.0	5.0%
57	29,256	1,037	3.5%	1,462.8	5.0%	1,462.8	5.0%
58	25,111	1,275	5.1%	1,255.5	5.0%	1,255.5	5.0%
59	20,924	1,062	5.1%	1,046.2	5.0%	1,046.2	5.0%
60	17,255	860	5.0%	1,725.5	10.0%	862.8	5.0%
61	13,464	1,387	10.3%	2,019.6	15.0%	1,346.4	10.0%
62	5,894	941	16.0%	1,473.4	25.0%	1,178.7	20.0%
63	4,206	510	12.1%	841.2	20.0%	841.2	20.0%
64	3,668	646	17.6%	733.5	20.0%	733.5	20.0%
65	-	-	0.0%	-	30.0%	-	30.0%
	193,696	11,045	5.7%	14,253.8	7.4%	12,423.1	6.4%

Data Summary D-7
Retirement Rates - Select Unreduced
State Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	152	33	21.7%	30.4	20.0%	30.4	20.0%
56	251	22	8.8%	50.2	20.0%	37.7	15.0%
57	191	14	7.3%	38.2	20.0%	28.7	15.0%
58	178	31	17.4%	35.6	20.0%	26.7	15.0%
59	162	22	13.6%	32.4	20.0%	24.3	15.0%
60	121	19	15.7%	30.3	25.0%	18.2	15.0%
61	112	23	20.5%	39.2	35.0%	22.4	20.0%
62	119	43	36.1%	59.5	50.0%	47.6	40.0%
63	93	31	33.3%	32.6	35.0%	32.6	35.0%
64	68	19	27.9%	23.8	35.0%	20.4	30.0%
65	295	63	21.4%	88.5	30.0%	88.5	30.0%
	1,742	320	18.4%	460.6	26.4%	377.3	21.7%

Data Summary D-8
Retirement Rates - Select Unreduced
State Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	2,682	614	22.9%	536.4	20.0%	536.4	20.0%
56	4,739	416	8.8%	947.8	20.0%	710.8	15.0%
57	3,516	250	7.1%	703.1	20.0%	527.4	15.0%
58	3,151	521	16.5%	630.2	20.0%	472.7	15.0%
59	2,789	374	13.4%	557.9	20.0%	418.4	15.0%
60	1,957	321	16.4%	489.2	25.0%	293.5	15.0%
61	1,736	350	20.2%	607.5	35.0%	347.2	20.0%
62	1,582	588	37.2%	791.1	50.0%	632.9	40.0%
63	1,107	363	32.8%	387.4	35.0%	387.4	35.0%
64	731	173	23.6%	255.8	35.0%	219.3	30.0%
65	1,464	387	26.5%	439.1	30.0%	439.1	30.0%
	25,453	4,358	17.1%	6,345.5	24.9%	4,984.9	19.6%

Data Summary D-9
Retirement Rates - Select Unreduced
School Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	970	290	29.9%	194.0	20.0%	291.0	30.0%
56	1,189	296	24.9%	237.8	20.0%	356.7	30.0%
57	610	151	24.8%	122.0	20.0%	183.0	30.0%
58	472	135	28.6%	94.4	20.0%	141.6	30.0%
59	391	95	24.3%	78.2	20.0%	117.3	30.0%
60	378	90	23.8%	94.5	25.0%	113.4	30.0%
61	257	66	25.7%	90.0	35.0%	77.1	30.0%
62	326	80	24.5%	163.0	50.0%	130.4	40.0%
63	225	59	26.2%	78.8	35.0%	67.5	30.0%
64	161	51	31.7%	56.4	35.0%	48.3	30.0%
65	1,643	263	16.0%	492.9	30.0%	492.9	30.0%
	6,622	1,576	23.8%	1,701.9	25.7%	2,019.2	30.5%

Data Summary D-10
Retirement Rates - Select Unreduced
School Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	16,244	4,918	30.3%	3,248.7	20.0%	4,873.1	30.0%
56	20,948	5,531	26.4%	4,189.6	20.0%	6,284.5	30.0%
57	10,669	2,802	26.3%	2,133.8	20.0%	3,200.7	30.0%
58	7,788	2,403	30.9%	1,557.6	20.0%	2,336.4	30.0%
59	5,667	1,424	25.1%	1,133.4	20.0%	1,700.2	30.0%
60	4,959	1,369	27.6%	1,239.6	25.0%	1,487.6	30.0%
61	2,808	806	28.7%	982.7	35.0%	842.3	30.0%
62	2,894	793	27.4%	1,446.8	50.0%	1,157.4	40.0%
63	1,775	537	30.3%	621.1	35.0%	532.4	30.0%
64	1,105	339	30.7%	386.7	35.0%	331.5	30.0%
65	2,465	749	30.4%	739.4	30.0%	739.4	30.0%
	77,320	21,671	28.0%	17,679.5	22.9%	23,485.3	30.4%

Data Summary D-11
Retirement Rates - Select Unreduced
Other Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	257	56	21.8%	51.4	20.0%	51.4	20.0%
56	290	36	12.4%	58.0	20.0%	58.0	20.0%
57	254	47	18.5%	50.8	20.0%	50.8	20.0%
58	226	37	16.4%	45.2	20.0%	45.2	20.0%
59	225	43	19.1%	45.0	20.0%	45.0	20.0%
60	197	30	15.2%	49.3	25.0%	39.4	20.0%
61	185	27	14.6%	64.8	35.0%	37.0	20.0%
62	248	76	30.6%	124.0	50.0%	99.2	40.0%
63	174	41	23.6%	60.9	35.0%	60.9	35.0%
64	130	39	30.0%	45.5	35.0%	45.5	35.0%
65	1,447	297	20.5%	434.1	30.0%	434.1	30.0%
	3,633	729	20.1%	1,028.9	28.3%	966.5	26.6%

Data Summary D-12
Retirement Rates - Select Unreduced
Other Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	3,907	839	21.5%	781.3	20.0%	781.3	20.0%
56	4,445	610	13.7%	889.1	20.0%	889.1	20.0%
57	4,122	853	20.7%	824.3	20.0%	824.3	20.0%
58	3,501	536	15.3%	700.1	20.0%	700.1	20.0%
59	3,196	589	18.4%	639.3	20.0%	639.3	20.0%
60	2,642	433	16.4%	660.4	25.0%	528.3	20.0%
61	2,238	373	16.7%	783.5	35.0%	447.7	20.0%
62	2,296	741	32.3%	1,148.2	50.0%	918.5	40.0%
63	1,486	364	24.5%	519.9	35.0%	519.9	35.0%
64	1,073	360	33.6%	375.4	35.0%	375.4	35.0%
65	3,117	934	29.9%	935.1	30.0%	935.1	30.0%
	32,022	6,632	20.7%	8,256.6	25.8%	7,559.1	23.6%

Data Summary D-13
Retirement Rates - Ultimate Unreduced
State Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	119	17	14.3%	11.9	10.0%	17.9	15.0%
56	210	19	9.0%	21.0	10.0%	31.5	15.0%
57	422	29	6.9%	84.4	20.0%	63.3	15.0%
58	540	49	9.1%	108.0	20.0%	81.0	15.0%
59	588	77	13.1%	117.6	20.0%	88.2	15.0%
60	567	80	14.1%	141.8	25.0%	85.1	15.0%
61	478	92	19.2%	143.4	30.0%	95.6	20.0%
62	662	233	35.2%	264.8	40.0%	264.8	40.0%
63	400	85	21.3%	120.0	30.0%	120.0	30.0%
64	308	88	28.6%	107.8	35.0%	92.4	30.0%
65	248	86	34.7%	111.6	45.0%	74.4	30.0%
66	362	78	21.5%	72.4	20.0%	108.6	30.0%
67	288	45	15.6%	43.2	15.0%	57.6	20.0%
68	208	40	19.2%	31.2	15.0%	41.6	20.0%
69	154	45	29.2%	53.9	35.0%	53.9	35.0%
70	105	54	51.4%	105.0	100.0%	105.0	100.0%
	5,659	1,117	19.7%	1,538.0	27.2%	1,380.8	24.4%

Data Summary D-14
Retirement Rates - Ultimate Unreduced
State Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	1,931	285	14.8%	193.1	10.0%	289.7	15.0%
56	3,484	335	9.6%	348.4	10.0%	522.6	15.0%
57	7,596	528	6.9%	1,519.3	20.0%	1,139.5	15.0%
58	9,815	997	10.2%	1,963.0	20.0%	1,472.3	15.0%
59	10,778	1,421	13.2%	2,155.5	20.0%	1,616.6	15.0%
60	10,204	1,460	14.3%	2,551.0	25.0%	1,530.6	15.0%
61	8,565	1,762	20.6%	2,569.5	30.0%	1,713.0	20.0%
62	9,935	3,525	35.5%	3,974.2	40.0%	3,974.2	40.0%
63	6,053	1,312	21.7%	1,815.9	30.0%	1,815.9	30.0%
64	4,691	1,342	28.6%	1,641.9	35.0%	1,407.3	30.0%
65	3,781	1,182	31.3%	1,701.4	45.0%	1,134.3	30.0%
66	3,315	878	26.5%	662.9	20.0%	994.4	30.0%
67	2,222	480	21.6%	333.3	15.0%	444.4	20.0%
68	1,435	342	23.9%	215.3	15.0%	287.0	20.0%
69	987	429	43.4%	345.6	35.0%	345.6	35.0%
70	580	470	81.1%	580.1	100.0%	580.1	100.0%
	85,373	16,749	19.6%	22,570.4	26.4%	19,267.5	22.6%

Data Summary D-15
Retirement Rates - Ultimate Unreduced
School Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	40	9	22.5%	4.0	10.0%	9.2	23.0%
56	698	140	20.1%	69.8	10.0%	160.5	23.0%
57	1,405	261	18.6%	281.0	20.0%	323.2	23.0%
58	1,500	272	18.1%	300.0	20.0%	345.0	23.0%
59	1,375	272	19.8%	275.0	20.0%	316.3	23.0%
60	1,251	222	17.7%	312.8	25.0%	287.7	23.0%
61	1,140	319	28.0%	342.0	30.0%	342.0	30.0%
62	1,425	409	28.7%	570.0	40.0%	498.8	35.0%
63	1,025	256	25.0%	307.5	30.0%	307.5	30.0%
64	757	215	28.4%	264.9	35.0%	227.1	30.0%
65	590	216	36.6%	265.5	45.0%	265.5	45.0%
66	1,679	268	16.0%	335.8	20.0%	587.7	35.0%
67	1,449	171	11.8%	217.4	15.0%	362.3	25.0%
68	1,263	119	9.4%	189.5	15.0%	315.8	25.0%
69	1,176	279	23.7%	411.6	35.0%	470.4	40.0%
70	886	377	42.6%	886.0	100.0%	886.0	100.0%
	17,659	3,805	21.5%	5,032.7	28.5%	5,704.8	32.3%

Data Summary D-16
Retirement Rates - Ultimate Unreduced
School Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	458	101	22.0%	45.8	10.0%	105.4	23.0%
56	11,785	2,435	20.7%	1,178.5	10.0%	2,710.5	23.0%
57	24,629	4,837	19.6%	4,925.9	20.0%	5,664.8	23.0%
58	26,377	4,988	18.9%	5,275.4	20.0%	6,066.7	23.0%
59	23,875	5,032	21.1%	4,774.9	20.0%	5,491.1	23.0%
60	21,286	4,184	19.7%	5,321.4	25.0%	4,895.7	23.0%
61	18,361	5,382	29.3%	5,508.4	30.0%	5,508.4	30.0%
62	17,744	5,519	31.1%	7,097.5	40.0%	6,210.3	35.0%
63	12,015	3,364	28.0%	3,604.4	30.0%	3,604.4	30.0%
64	8,329	2,549	30.6%	2,915.0	35.0%	2,498.6	30.0%
65	5,922	2,461	41.6%	2,664.9	45.0%	2,664.9	45.0%
66	4,900	1,569	32.0%	980.1	20.0%	1,715.1	35.0%
67	3,301	763	23.1%	495.2	15.0%	825.3	25.0%
68	2,658	467	17.6%	398.8	15.0%	664.6	25.0%
69	2,168	873	40.3%	758.8	35.0%	867.2	40.0%
70	1,248	878	70.4%	1,247.5	100.0%	1,247.5	100.0%
	185,055	45,403	24.5%	47,192.4	25.5%	50,740.5	27.4%

Data Summary D-17
Retirement Rates - Ultimate Unreduced
Other Membership

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	150	31	20.7%	15.0	10.0%	22.5	15.0%
56	281	24	8.5%	28.1	10.0%	42.2	15.0%
57	447	39	8.7%	89.4	20.0%	67.1	15.0%
58	548	56	10.2%	109.6	20.0%	82.2	15.0%
59	597	64	10.7%	119.4	20.0%	89.6	15.0%
60	576	72	12.5%	144.0	25.0%	86.4	15.0%
61	568	113	19.9%	170.4	30.0%	113.6	20.0%
62	963	280	29.1%	385.2	40.0%	337.1	35.0%
63	677	132	19.5%	203.1	30.0%	169.3	25.0%
64	523	124	23.7%	183.0	35.0%	130.8	25.0%
65	455	179	39.3%	204.7	45.0%	182.0	40.0%
66	1,394	232	16.6%	278.8	20.0%	418.2	30.0%
67	1,143	146	12.8%	171.5	15.0%	228.6	20.0%
68	1,014	127	12.5%	152.1	15.0%	202.8	20.0%
69	909	212	23.3%	318.1	35.0%	363.6	40.0%
70	693	291	42.0%	693.0	100.0%	693.0	100.0%
	10,938	2,122	19.4%	3,265.5	29.9%	3,228.7	29.5%

Data Summary D-18
Retirement Rates - Ultimate Unreduced
Other Membership (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	2,083	421	20.2%	208.3	10.0%	312.5	15.0%
56	4,091	357	8.7%	409.1	10.0%	613.6	15.0%
57	6,661	652	9.8%	1,332.1	20.0%	999.1	15.0%
58	8,363	978	11.7%	1,672.6	20.0%	1,254.5	15.0%
59	9,283	1,052	11.3%	1,856.5	20.0%	1,392.4	15.0%
60	8,835	1,198	13.6%	2,208.8	25.0%	1,325.3	15.0%
61	8,457	1,648	19.5%	2,537.1	30.0%	1,691.4	20.0%
62	11,541	3,352	29.0%	4,616.4	40.0%	4,039.3	35.0%
63	7,947	1,630	20.5%	2,384.2	30.0%	1,986.8	25.0%
64	6,063	1,466	24.2%	2,122.0	35.0%	1,515.7	25.0%
65	5,024	1,943	38.7%	2,261.0	45.0%	2,009.8	40.0%
66	4,740	1,457	30.7%	947.9	20.0%	1,421.9	30.0%
67	2,994	622	20.8%	449.1	15.0%	598.8	20.0%
68	2,275	492	21.6%	341.3	15.0%	455.1	20.0%
69	1,749	646	36.9%	612.2	35.0%	699.7	40.0%
70	1,014	739	72.9%	1,013.6	100.0%	1,013.6	100.0%
	91,120	18,652	20.5%	24,972.4	27.4%	21,329.5	23.4%

Data Summary D-19
Retirement Rates
Special Services Group 1

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
50	48	6	12.5%	14.4	30.0%	9.6	20.0%
51	100	16	16.0%	30.0	30.0%	20.0	20.0%
52	128	19	14.8%	38.4	30.0%	25.6	20.0%
53	140	19	13.6%	42.0	30.0%	28.0	20.0%
54	133	18	13.5%	39.9	30.0%	26.6	20.0%
55	120	28	23.3%	18.0	15.0%	30.0	25.0%
56	101	9	8.9%	10.1	10.0%	20.2	20.0%
57	80	10	12.5%	8.0	10.0%	16.0	20.0%
58	66	13	19.7%	6.6	10.0%	13.2	20.0%
59	43	4	9.3%	4.3	10.0%	8.6	20.0%
60	37	5	13.5%	3.7	10.0%	7.4	20.0%
61	29	3	10.3%	5.8	20.0%	5.8	20.0%
62	24	7	29.2%	8.4	35.0%	8.4	35.0%
63	14	4	28.6%	2.8	20.0%	7.0	50.0%
64	12	4	33.3%	4.2	35.0%	6.0	50.0%
65	8	6	75.0%	8.0	100.0%	8.0	100.0%
	1,083	171	15.8%	244.6	22.6%	240.4	22.2%

Data Summary D-20
Retirement Rates
Special Services Group 1 (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
50	686	103	15.0%	205.9	30.0%	137.3	20.0%
51	1,334	236	17.7%	400.1	30.0%	266.8	20.0%
52	1,717	322	18.7%	515.0	30.0%	343.4	20.0%
53	1,800	316	17.5%	539.9	30.0%	359.9	20.0%
54	1,737	279	16.1%	521.2	30.0%	347.5	20.0%
55	1,544	372	24.1%	231.6	15.0%	386.0	25.0%
56	1,293	140	10.8%	129.3	10.0%	258.7	20.0%
57	1,077	181	16.8%	107.7	10.0%	215.3	20.0%
58	789	209	26.5%	78.9	10.0%	157.9	20.0%
59	507	68	13.3%	50.7	10.0%	101.3	20.0%
60	440	65	14.8%	44.0	10.0%	88.0	20.0%
61	389	37	9.6%	77.8	20.0%	77.8	20.0%
62	314	94	30.0%	109.8	35.0%	109.8	35.0%
63	191	94	49.4%	38.2	20.0%	95.4	50.0%
64	112	57	50.8%	39.3	35.0%	56.1	50.0%
65	60	54	90.6%	59.6	100.0%	59.6	100.0%
	13,989	2,627	18.8%	3,148.9	22.5%	3,060.6	21.9%

Data Summary D-21
Retirement Rates
Special Services Group 2

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
50	-	-	0.0%	-	30.0%	-	0.0%
51	-	-	0.0%	-	30.0%	-	0.0%
52	-	-	0.0%	-	30.0%	-	0.0%
53	-	-	0.0%	-	30.0%	-	0.0%
54	-	-	0.0%	-	30.0%	-	0.0%
55	600	76	12.7%	90.0	15.0%	120.0	20.0%
56	531	27	5.1%	53.1	10.0%	53.1	10.0%
57	469	35	7.5%	46.9	10.0%	46.9	10.0%
58	442	22	5.0%	44.2	10.0%	44.2	10.0%
59	385	28	7.3%	38.5	10.0%	38.5	10.0%
60	297	22	7.4%	29.7	10.0%	29.7	10.0%
61	225	18	8.0%	45.0	20.0%	22.5	10.0%
62	179	33	18.4%	62.6	35.0%	62.7	35.0%
63	131	24	18.3%	26.2	20.0%	39.3	30.0%
64	98	16	16.3%	34.3	35.0%	29.4	30.0%
65	78	31	39.7%	78.0	100.0%	78.0	100.0%
	3,435	332	9.7%	548.6	16.0%	564.3	16.4%

Data Summary D-22
Retirement Rates
Special Services Group 2 (Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
50	-	-	0.0%	-	30.0%	-	0.0%
51	-	-	0.0%	-	30.0%	-	0.0%
52	-	-	0.0%	-	30.0%	-	0.0%
53	-	-	0.0%	-	30.0%	-	0.0%
54	-	-	0.0%	-	30.0%	-	0.0%
55	4,922	1,039	21.1%	738.4	15.0%	984.5	20.0%
56	4,199	336	8.0%	419.9	10.0%	419.9	10.0%
57	3,552	436	12.3%	355.2	10.0%	355.2	10.0%
58	3,229	268	8.3%	322.9	10.0%	322.9	10.0%
59	2,647	306	11.6%	264.7	10.0%	264.7	10.0%
60	2,083	255	12.2%	208.3	10.0%	208.3	10.0%
61	1,521	214	14.0%	304.1	20.0%	152.1	10.0%
62	1,169	317	27.2%	409.1	35.0%	409.1	35.0%
63	813	225	27.7%	162.7	20.0%	244.0	30.0%
64	567	136	24.0%	198.5	35.0%	170.1	30.0%
65	487	267	54.9%	487.2	100.0%	487.2	100.0%
	25,189	3,799	15.1%	3,870.9	15.4%	4,017.9	16.0%

APPENDIX E

DISABILITY

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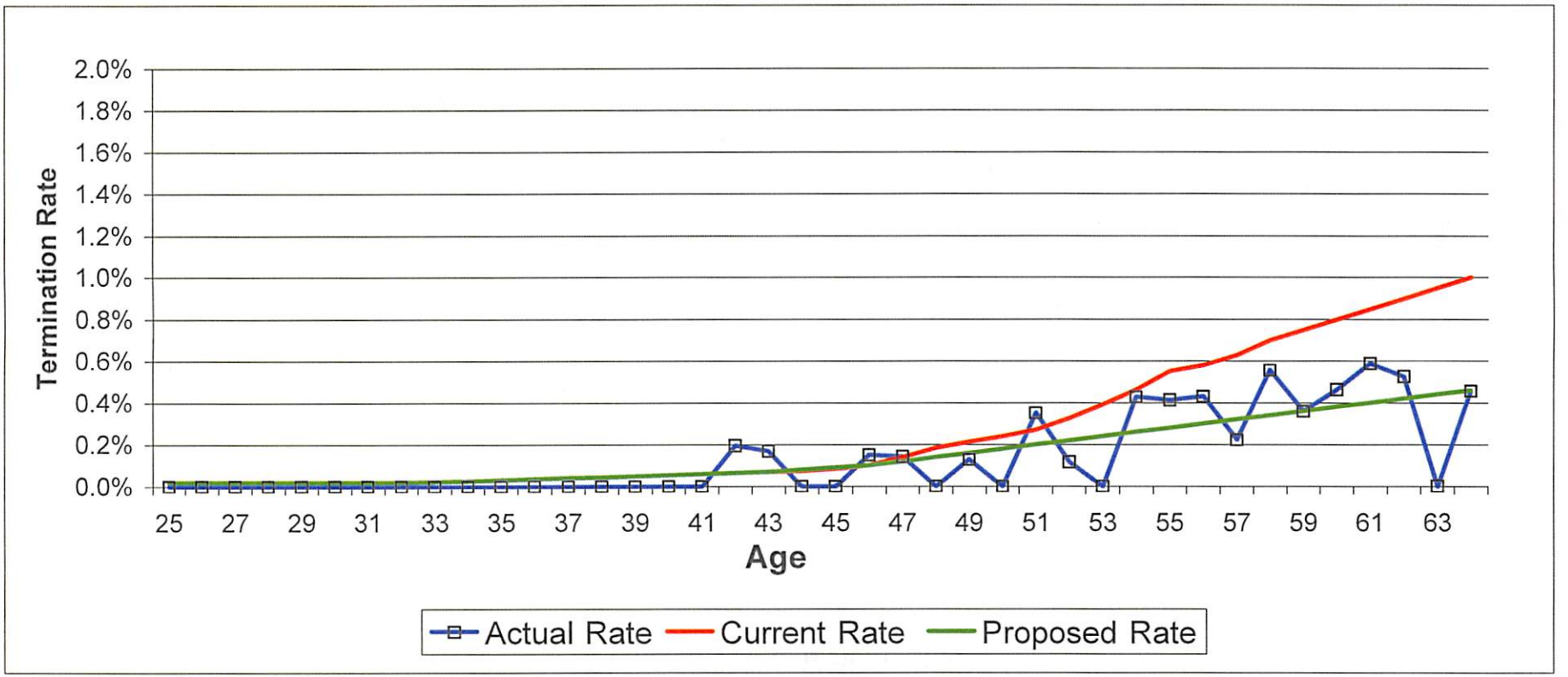
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-1

Rates of Disability

Males - State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	40	69	39
Actual/Expected		58%	103%

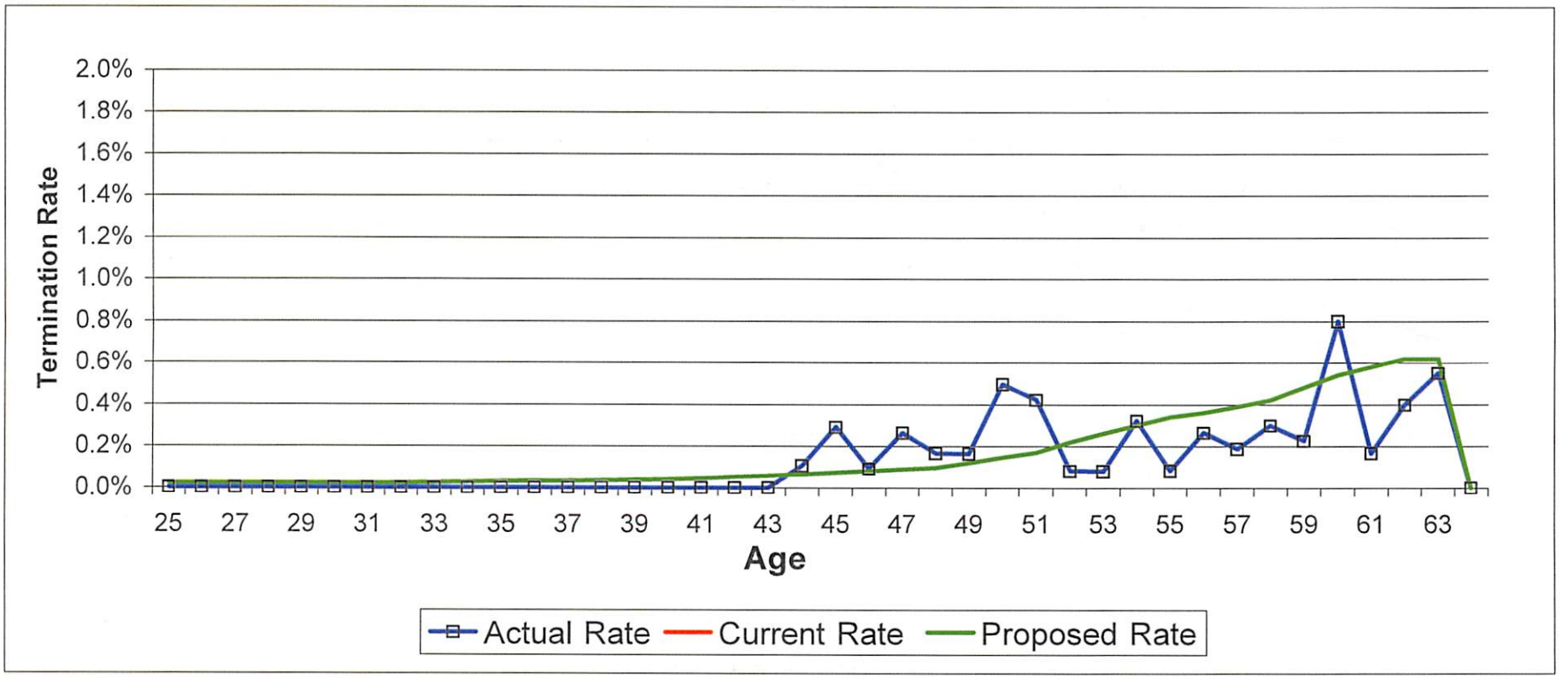
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-2

Rates of Disability

Females - State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	51	55	55
Actual/Expected		93%	93%

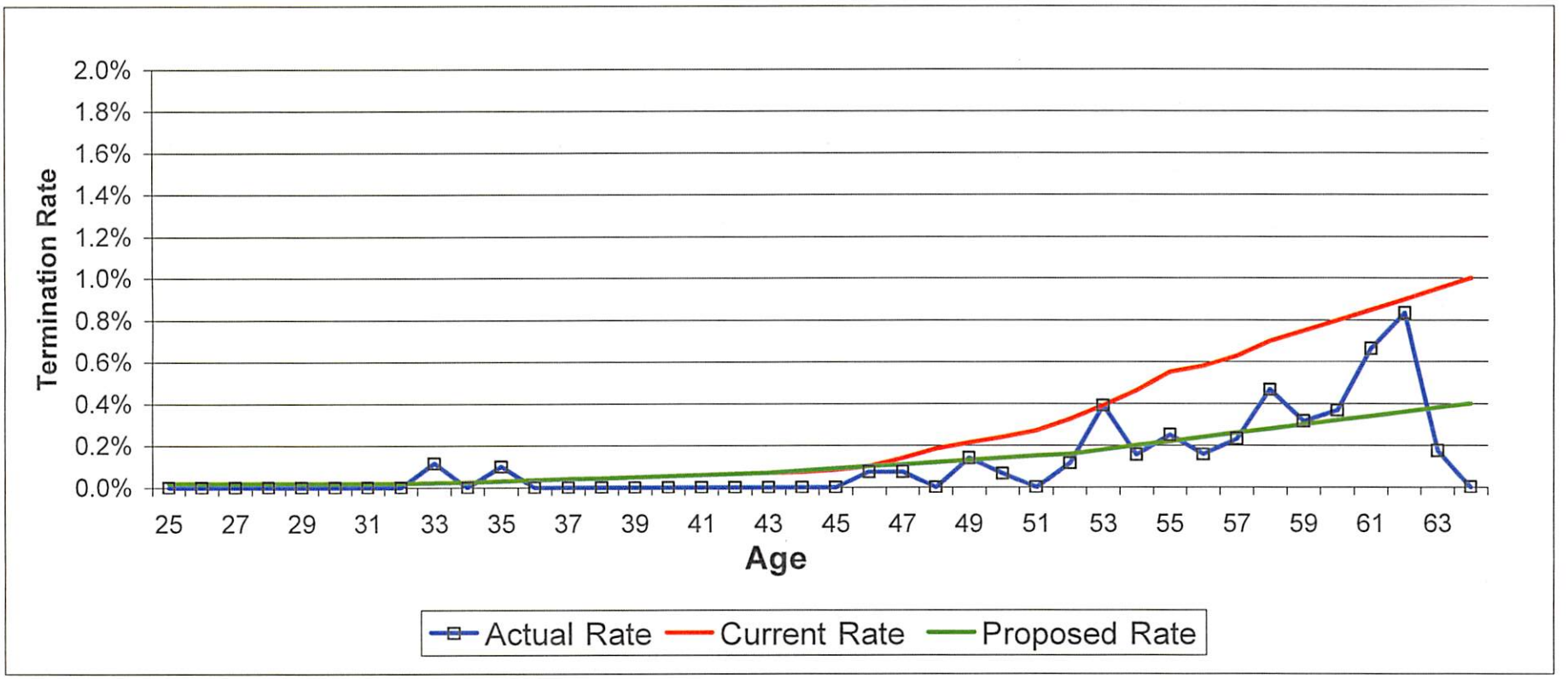
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-3

Rates of Disability

Males - School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	59	132	63
Actual/Expected		45%	94%

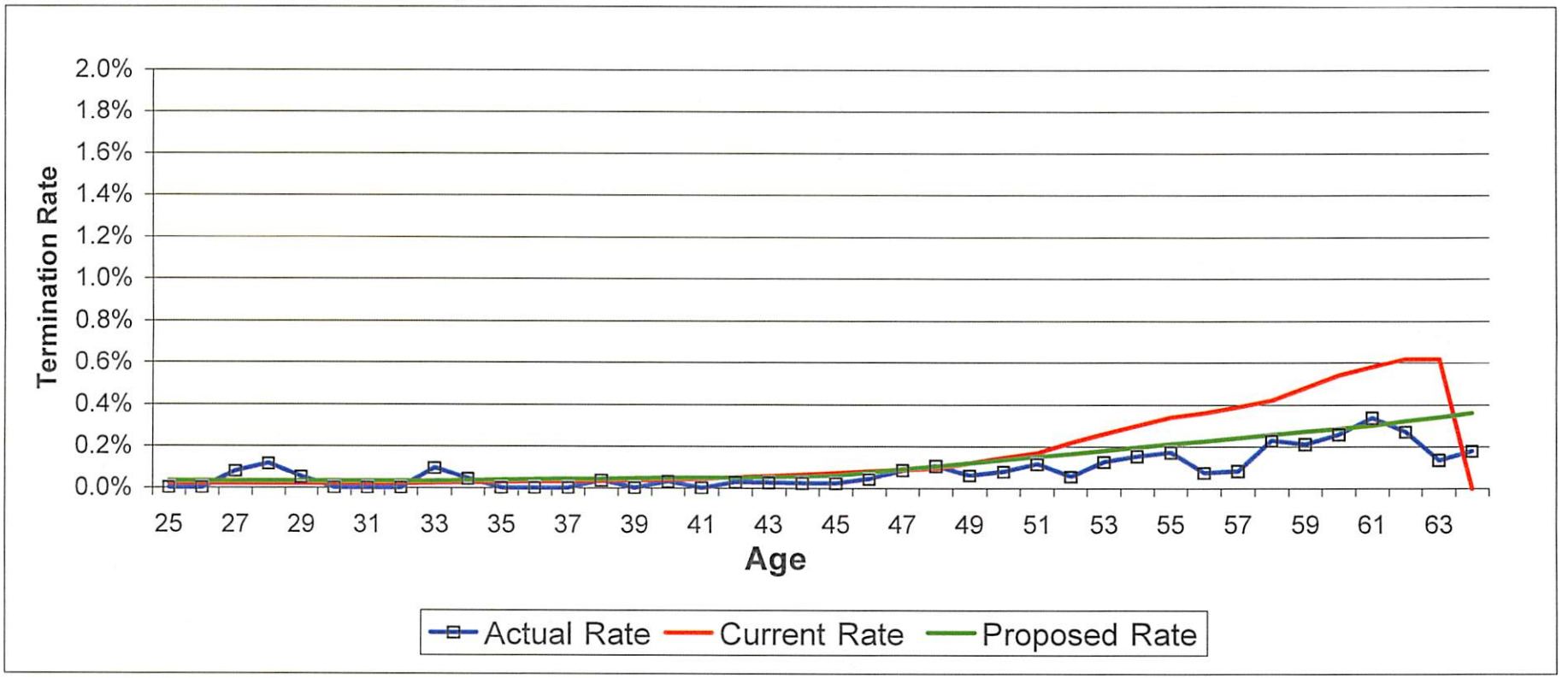
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-4

Rates of Disability

Females - School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	117	243	173
Actual/Expected		48%	68%

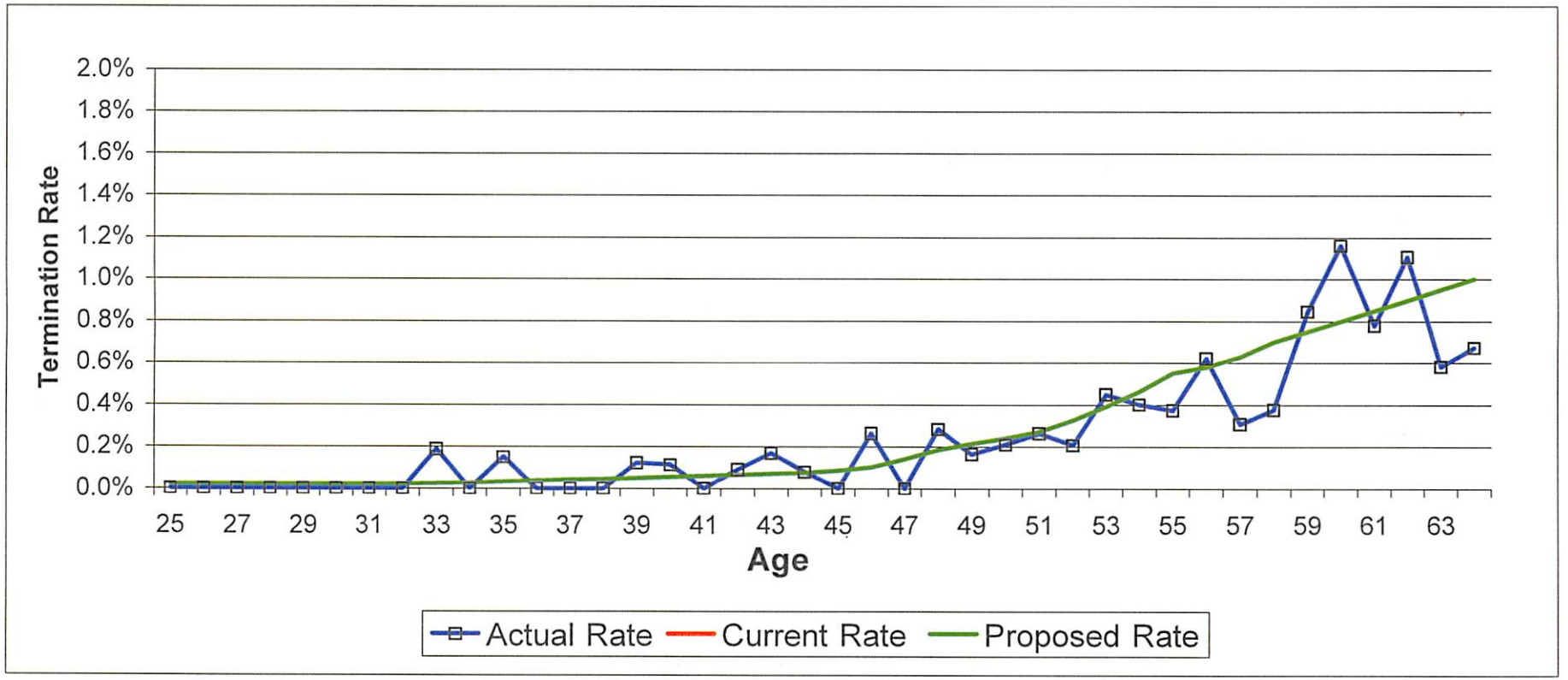
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-5

Rates of Disability

Males - Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	131	143	143
Actual/Expected		92%	92%

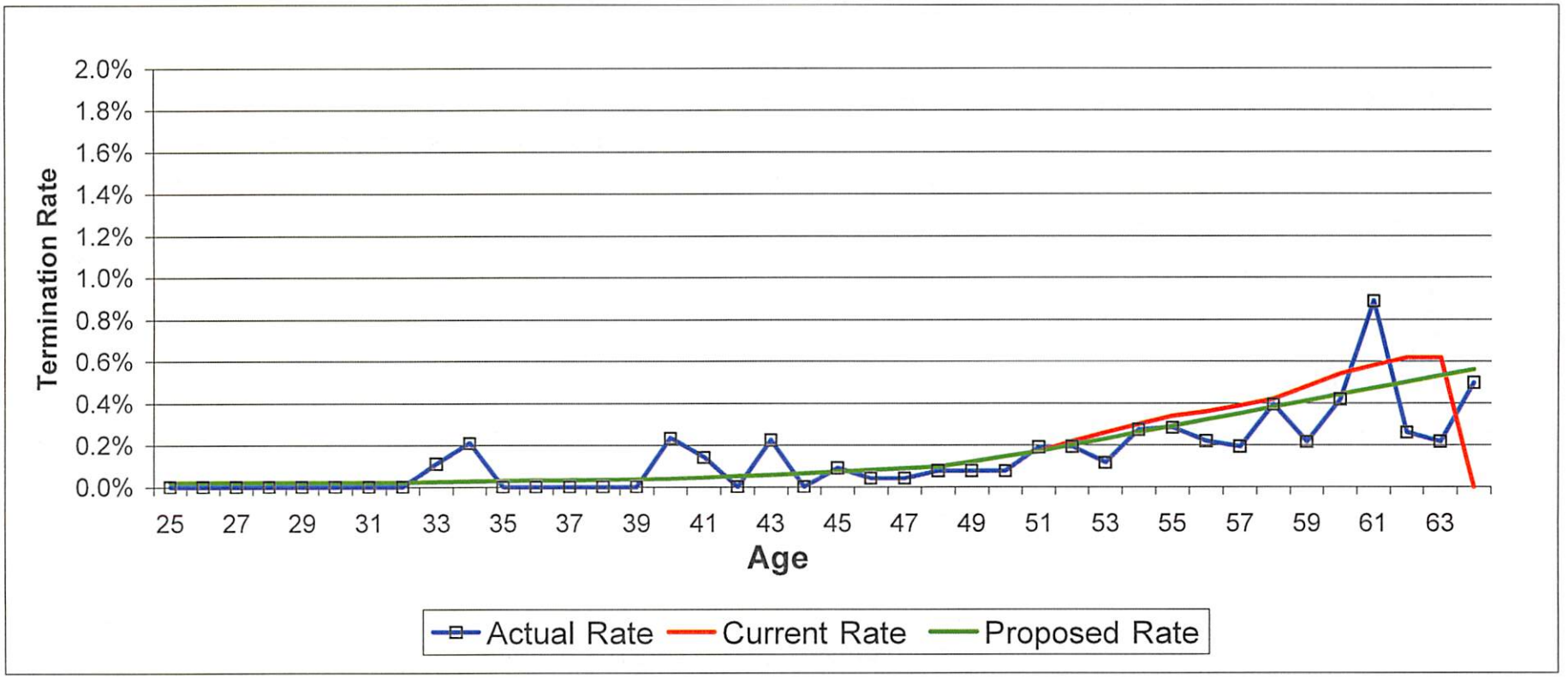
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-6

Rates of Disability

Females - Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	98	119	110
Actual/Expected		82%	89%

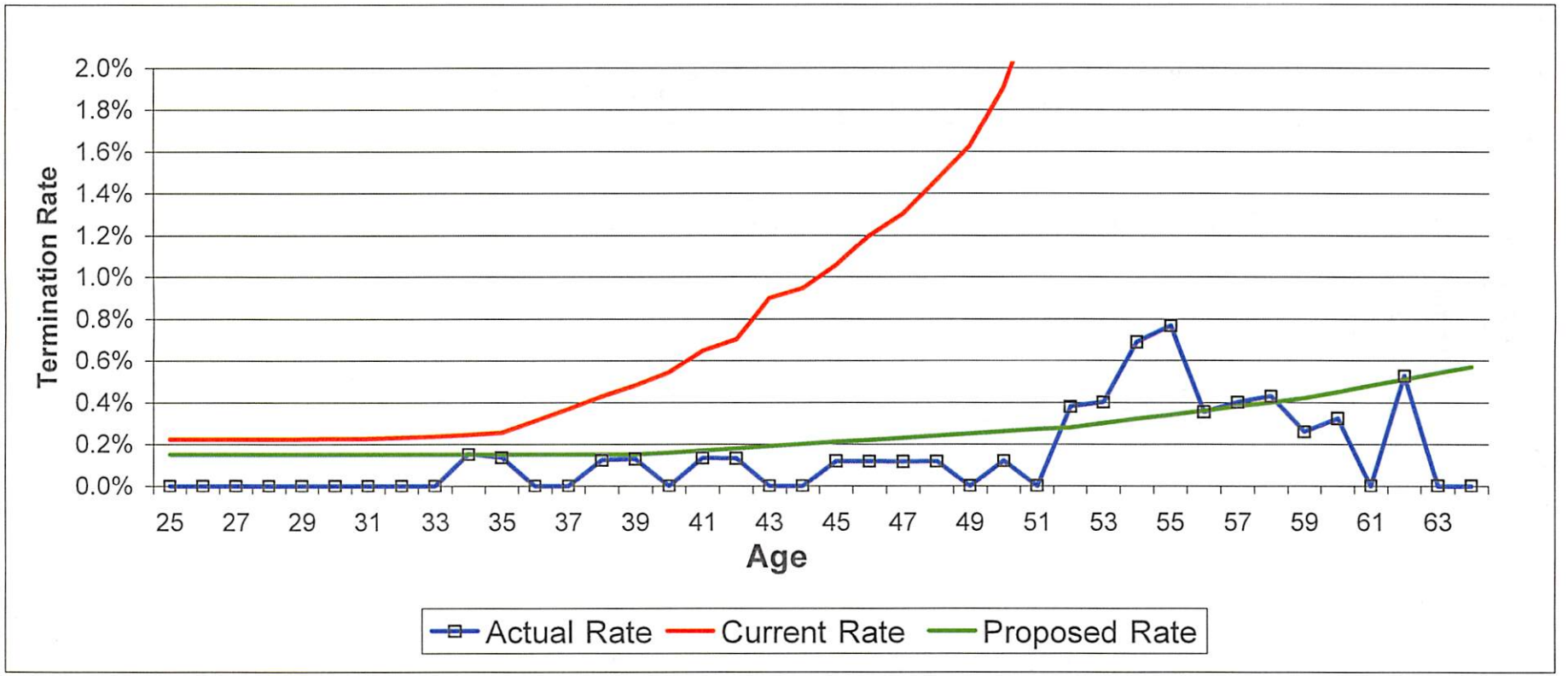
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit E-7

Rates of Disability

Special Services



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	36	457	54
Actual/Expected		8%	67%

Data Summary E-1
Rates of Disability
Males - State Membership

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	19	-	0.000%	0.0	0.020%	0.0	0.020%
26	42	-	0.000%	0.0	0.020%	0.0	0.020%
27	62	-	0.000%	0.0	0.020%	0.0	0.020%
28	101	-	0.000%	0.0	0.020%	0.0	0.020%
29	128	-	0.000%	0.0	0.020%	0.0	0.020%
30	174	-	0.000%	0.0	0.020%	0.0	0.020%
31	199	-	0.000%	0.0	0.020%	0.0	0.020%
32	221	-	0.000%	0.0	0.020%	0.0	0.020%
33	230	-	0.000%	0.1	0.022%	0.1	0.022%
34	267	-	0.000%	0.1	0.025%	0.1	0.025%
35	330	-	0.000%	0.1	0.030%	0.1	0.030%
36	372	-	0.000%	0.1	0.035%	0.1	0.035%
37	388	-	0.000%	0.2	0.040%	0.2	0.040%
38	362	-	0.000%	0.2	0.045%	0.2	0.045%
39	368	-	0.000%	0.2	0.050%	0.2	0.050%
40	396	-	0.000%	0.2	0.055%	0.2	0.055%
41	486	-	0.000%	0.3	0.060%	0.3	0.060%
42	509	1	0.196%	0.3	0.065%	0.3	0.065%
43	590	1	0.169%	0.4	0.070%	0.4	0.070%
44	605	-	0.000%	0.5	0.075%	0.5	0.080%
45	620	-	0.000%	0.5	0.085%	0.6	0.090%
46	657	1	0.152%	0.7	0.100%	0.7	0.100%
47	696	1	0.144%	1.0	0.140%	0.8	0.120%
48	714	-	0.000%	1.3	0.184%	1.0	0.140%
49	770	1	0.130%	1.6	0.214%	1.2	0.160%
50	801	-	0.000%	1.9	0.240%	1.4	0.180%
51	853	3	0.352%	2.3	0.270%	1.7	0.200%
52	854	1	0.117%	2.8	0.326%	1.9	0.220%
53	883	-	0.000%	3.5	0.392%	2.1	0.240%
54	935	4	0.428%	4.3	0.462%	2.4	0.260%
55	967	4	0.414%	5.3	0.550%	2.7	0.280%
56	929	4	0.431%	5.4	0.580%	2.8	0.300%
57	896	2	0.223%	5.6	0.630%	2.9	0.320%
58	901	5	0.555%	6.3	0.700%	3.1	0.340%
59	834	3	0.360%	6.3	0.750%	3.0	0.360%
60	649	3	0.462%	5.2	0.800%	2.5	0.380%
61	510	3	0.588%	4.3	0.850%	2.0	0.400%
62	381	2	0.525%	3.4	0.900%	1.6	0.420%
63	283	-	0.000%	2.7	0.950%	1.2	0.440%
64	219	1	0.457%	2.2	1.000%	1.0	0.460%
	20,201	40	0.198%	69.4	0.344%	39.4	0.195%

Data Summary E-2
Rates of Disability
Females - State Membership

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	41	-	0.000%	0.0	0.020%	0.0	0.020%
26	73	-	0.000%	0.0	0.020%	0.0	0.020%
27	152	-	0.000%	0.0	0.020%	0.0	0.020%
28	179	-	0.000%	0.0	0.020%	0.0	0.020%
29	249	-	0.000%	0.0	0.020%	0.0	0.020%
30	301	-	0.000%	0.1	0.020%	0.1	0.020%
31	354	-	0.000%	0.1	0.020%	0.1	0.020%
32	375	-	0.000%	0.1	0.020%	0.1	0.020%
33	348	-	0.000%	0.1	0.022%	0.1	0.022%
34	400	-	0.000%	0.1	0.025%	0.1	0.025%
35	457	-	0.000%	0.1	0.027%	0.1	0.027%
36	503	-	0.000%	0.2	0.030%	0.2	0.030%
37	524	-	0.000%	0.2	0.032%	0.2	0.032%
38	525	-	0.000%	0.2	0.034%	0.2	0.034%
39	543	-	0.000%	0.2	0.036%	0.2	0.036%
40	593	-	0.000%	0.2	0.038%	0.2	0.038%
41	664	-	0.000%	0.3	0.044%	0.3	0.044%
42	751	-	0.000%	0.4	0.051%	0.4	0.051%
43	833	-	0.000%	0.5	0.057%	0.5	0.057%
44	929	1	0.108%	0.6	0.065%	0.6	0.065%
45	1,030	3	0.291%	0.7	0.072%	0.7	0.072%
46	1,084	1	0.092%	0.9	0.080%	0.9	0.080%
47	1,138	3	0.264%	1.0	0.087%	1.0	0.087%
48	1,198	2	0.167%	1.1	0.095%	1.1	0.095%
49	1,218	2	0.164%	1.5	0.120%	1.5	0.120%
50	1,209	6	0.496%	1.8	0.145%	1.8	0.145%
51	1,183	5	0.423%	2.0	0.170%	2.0	0.170%
52	1,206	1	0.083%	2.7	0.220%	2.7	0.220%
53	1,232	1	0.081%	3.2	0.260%	3.2	0.260%
54	1,237	4	0.323%	3.7	0.300%	3.7	0.300%
55	1,192	1	0.084%	4.1	0.340%	4.1	0.340%
56	1,132	3	0.265%	4.1	0.360%	4.1	0.360%
57	1,065	2	0.188%	4.2	0.390%	4.2	0.390%
58	1,000	3	0.300%	4.2	0.420%	4.2	0.420%
59	882	2	0.227%	4.2	0.480%	4.2	0.480%
60	750	6	0.800%	4.1	0.540%	4.1	0.540%
61	596	1	0.168%	3.5	0.580%	3.5	0.580%
62	501	2	0.399%	3.1	0.620%	3.1	0.620%
63	363	2	0.551%	2.3	0.620%	2.3	0.620%
64	293	-	0.000%	-	0.000%	-	0.000%
	28,303	51	0.180%	55.4	0.196%	55.4	0.196%

Data Summary E-3
Rates of Disability
Males - School Membership

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	44	-	0.000%	0.0	0.020%	0.0	0.020%
26	109	-	0.000%	0.0	0.020%	0.0	0.020%
27	331	-	0.000%	0.1	0.020%	0.1	0.020%
28	609	-	0.000%	0.1	0.020%	0.1	0.020%
29	731	-	0.000%	0.1	0.020%	0.1	0.020%
30	778	-	0.000%	0.2	0.020%	0.2	0.020%
31	788	-	0.000%	0.2	0.020%	0.2	0.020%
32	790	-	0.000%	0.2	0.020%	0.2	0.020%
33	862	1	0.116%	0.2	0.022%	0.2	0.022%
34	951	-	0.000%	0.2	0.025%	0.2	0.025%
35	994	1	0.101%	0.3	0.030%	0.3	0.030%
36	1,003	-	0.000%	0.4	0.035%	0.4	0.035%
37	1,017	-	0.000%	0.4	0.040%	0.4	0.040%
38	987	-	0.000%	0.4	0.045%	0.4	0.045%
39	969	-	0.000%	0.5	0.050%	0.5	0.050%
40	928	-	0.000%	0.5	0.055%	0.5	0.055%
41	1,007	-	0.000%	0.6	0.060%	0.6	0.060%
42	1,038	-	0.000%	0.7	0.065%	0.7	0.065%
43	1,134	-	0.000%	0.8	0.070%	0.8	0.070%
44	1,159	-	0.000%	0.9	0.075%	0.9	0.080%
45	1,240	-	0.000%	1.1	0.085%	1.1	0.090%
46	1,315	1	0.076%	1.3	0.100%	1.3	0.100%
47	1,320	1	0.076%	1.8	0.140%	1.5	0.110%
48	1,355	-	0.000%	2.5	0.184%	1.6	0.120%
49	1,422	2	0.141%	3.0	0.214%	1.8	0.130%
50	1,506	1	0.066%	3.6	0.240%	2.1	0.140%
51	1,625	-	0.000%	4.4	0.270%	2.4	0.150%
52	1,720	2	0.116%	5.6	0.326%	2.8	0.160%
53	1,789	7	0.391%	7.0	0.392%	3.2	0.180%
54	1,918	3	0.156%	8.9	0.462%	3.8	0.200%
55	1,991	5	0.251%	11.0	0.550%	4.4	0.220%
56	1,900	3	0.158%	11.0	0.580%	4.6	0.240%
57	1,721	4	0.232%	10.8	0.630%	4.5	0.260%
58	1,499	7	0.467%	10.5	0.700%	4.2	0.280%
59	1,264	4	0.316%	9.5	0.750%	3.8	0.300%
60	1,088	4	0.368%	8.7	0.800%	3.5	0.320%
61	903	6	0.664%	7.7	0.850%	3.1	0.340%
62	719	6	0.834%	6.5	0.900%	2.6	0.360%
63	571	1	0.175%	5.4	0.950%	2.2	0.380%
64	461	-	0.000%	4.6	1.000%	1.8	0.400%
	43,556	59	0.135%	131.6	0.302%	63.0	0.145%

Data Summary E-4
Rates of Disability
Females - School Membership

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	121	-	0.000%	0.0	0.020%	0.0	0.030%
26	543	-	0.000%	0.1	0.020%	0.2	0.030%
27	1,253	1	0.080%	0.3	0.020%	0.4	0.030%
28	1,723	2	0.116%	0.3	0.020%	0.5	0.030%
29	1,900	1	0.053%	0.4	0.020%	0.6	0.030%
30	1,933	-	0.000%	0.4	0.020%	0.6	0.030%
31	1,931	-	0.000%	0.4	0.020%	0.6	0.030%
32	1,943	-	0.000%	0.4	0.020%	0.6	0.030%
33	2,110	2	0.095%	0.5	0.022%	0.7	0.032%
34	2,264	1	0.044%	0.6	0.025%	0.8	0.034%
35	2,525	-	0.000%	0.7	0.027%	0.9	0.036%
36	2,600	-	0.000%	0.8	0.030%	1.0	0.038%
37	2,699	-	0.000%	0.9	0.032%	1.1	0.040%
38	2,771	1	0.036%	0.9	0.034%	1.2	0.042%
39	2,964	-	0.000%	1.1	0.036%	1.3	0.044%
40	3,141	1	0.032%	1.2	0.038%	1.4	0.046%
41	3,268	-	0.000%	1.4	0.044%	1.6	0.048%
42	3,484	1	0.029%	1.8	0.051%	1.7	0.050%
43	3,869	1	0.026%	2.2	0.057%	2.0	0.052%
44	4,219	1	0.024%	2.7	0.065%	2.3	0.055%
45	4,465	1	0.022%	3.2	0.072%	2.7	0.060%
46	4,586	2	0.044%	3.7	0.080%	3.4	0.075%
47	4,630	4	0.086%	4.0	0.087%	4.2	0.090%
48	4,664	5	0.107%	4.4	0.095%	4.9	0.105%
49	4,858	3	0.062%	5.8	0.120%	5.8	0.120%
50	5,056	4	0.079%	7.3	0.145%	6.8	0.135%
51	5,140	6	0.117%	8.7	0.170%	7.7	0.150%
52	5,394	3	0.056%	11.9	0.220%	8.9	0.165%
53	5,528	7	0.127%	14.4	0.260%	10.0	0.180%
54	5,855	9	0.154%	17.6	0.300%	11.4	0.195%
55	5,810	10	0.172%	19.8	0.340%	12.2	0.210%
56	5,397	4	0.074%	19.4	0.360%	12.1	0.225%
57	4,795	4	0.083%	18.7	0.390%	11.5	0.240%
58	4,372	10	0.229%	18.4	0.420%	11.1	0.255%
59	3,777	8	0.212%	18.1	0.480%	10.2	0.270%
60	3,084	8	0.259%	16.7	0.540%	8.8	0.285%
61	2,374	8	0.337%	13.8	0.580%	7.1	0.300%
62	1,846	5	0.271%	11.4	0.620%	5.9	0.320%
63	1,478	2	0.135%	9.2	0.620%	5.0	0.340%
64	1,116	2	0.179%	-	0.000%	4.0	0.360%
	131,486	117	0.089%	243.4	0.185%	173.3	0.132%

Data Summary E-5
Rates of Disability
Males - Other Membership

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	124	-	0.000%	0.0	0.020%	0.0	0.020%
26	196	-	0.000%	0.0	0.020%	0.0	0.020%
27	236	-	0.000%	0.0	0.020%	0.0	0.020%
28	308	-	0.000%	0.1	0.020%	0.1	0.020%
29	371	-	0.000%	0.1	0.020%	0.1	0.020%
30	396	-	0.000%	0.1	0.020%	0.1	0.020%
31	414	-	0.000%	0.1	0.020%	0.1	0.020%
32	470	-	0.000%	0.1	0.020%	0.1	0.020%
33	531	1	0.188%	0.1	0.022%	0.1	0.022%
34	594	-	0.000%	0.1	0.025%	0.1	0.025%
35	666	1	0.150%	0.2	0.030%	0.2	0.030%
36	751	-	0.000%	0.3	0.035%	0.3	0.035%
37	781	-	0.000%	0.3	0.040%	0.3	0.040%
38	782	-	0.000%	0.4	0.045%	0.4	0.045%
39	814	1	0.123%	0.4	0.050%	0.4	0.050%
40	883	1	0.113%	0.5	0.055%	0.5	0.055%
41	961	-	0.000%	0.6	0.060%	0.6	0.060%
42	1,091	1	0.092%	0.7	0.065%	0.7	0.065%
43	1,175	2	0.170%	0.8	0.070%	0.8	0.070%
44	1,260	1	0.079%	0.9	0.075%	0.9	0.075%
45	1,407	-	0.000%	1.2	0.085%	1.2	0.085%
46	1,515	4	0.264%	1.5	0.100%	1.5	0.100%
47	1,654	-	0.000%	2.3	0.140%	2.3	0.140%
48	1,760	5	0.284%	3.2	0.184%	3.2	0.184%
49	1,818	3	0.165%	3.9	0.214%	3.9	0.214%
50	1,897	4	0.211%	4.6	0.240%	4.6	0.240%
51	1,896	5	0.264%	5.1	0.270%	5.1	0.270%
52	1,927	4	0.208%	6.3	0.326%	6.3	0.326%
53	2,001	9	0.450%	7.8	0.392%	7.8	0.392%
54	1,994	8	0.401%	9.2	0.462%	9.2	0.462%
55	1,874	7	0.374%	10.3	0.550%	10.3	0.550%
56	1,769	11	0.622%	10.3	0.580%	10.3	0.580%
57	1,621	5	0.308%	10.2	0.630%	10.2	0.630%
58	1,592	6	0.377%	11.1	0.700%	11.1	0.700%
59	1,419	12	0.846%	10.6	0.750%	10.6	0.750%
60	1,206	14	1.161%	9.6	0.800%	9.6	0.800%
61	1,027	8	0.779%	8.7	0.850%	8.7	0.850%
62	904	10	1.106%	8.1	0.900%	8.1	0.900%
63	687	4	0.582%	6.5	0.950%	6.5	0.950%
64	594	4	0.673%	5.9	1.000%	5.9	1.000%
	43,366	131	0.302%	142.6	0.329%	142.6	0.329%

Data Summary E-6
Rates of Disability
Females - Other Membership

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	233	-	0.000%	0.0	0.020%	0.0	0.020%
26	336	-	0.000%	0.1	0.020%	0.1	0.020%
27	437	-	0.000%	0.1	0.020%	0.1	0.020%
28	585	-	0.000%	0.1	0.020%	0.1	0.020%
29	667	-	0.000%	0.1	0.020%	0.1	0.020%
30	726	-	0.000%	0.1	0.020%	0.1	0.020%
31	796	-	0.000%	0.2	0.020%	0.2	0.020%
32	849	-	0.000%	0.2	0.020%	0.2	0.020%
33	889	1	0.112%	0.2	0.022%	0.2	0.022%
34	950	2	0.211%	0.2	0.025%	0.2	0.025%
35	1,099	-	0.000%	0.3	0.027%	0.3	0.027%
36	1,144	-	0.000%	0.3	0.030%	0.3	0.030%
37	1,188	-	0.000%	0.4	0.032%	0.4	0.032%
38	1,207	-	0.000%	0.4	0.034%	0.4	0.034%
39	1,250	-	0.000%	0.5	0.036%	0.5	0.036%
40	1,282	3	0.234%	0.5	0.038%	0.5	0.038%
41	1,408	2	0.142%	0.6	0.044%	0.6	0.044%
42	1,638	-	0.000%	0.8	0.051%	0.8	0.051%
43	1,781	4	0.225%	1.0	0.057%	1.0	0.057%
44	1,984	-	0.000%	1.3	0.065%	1.3	0.065%
45	2,197	2	0.091%	1.6	0.072%	1.6	0.072%
46	2,390	1	0.042%	1.9	0.080%	1.9	0.080%
47	2,404	1	0.042%	2.1	0.087%	2.1	0.087%
48	2,531	2	0.079%	2.4	0.095%	2.4	0.095%
49	2,543	2	0.079%	3.1	0.120%	3.1	0.120%
50	2,600	2	0.077%	3.8	0.145%	3.8	0.145%
51	2,617	5	0.191%	4.4	0.170%	4.4	0.170%
52	2,577	5	0.194%	5.7	0.220%	5.2	0.200%
53	2,577	3	0.116%	6.7	0.260%	5.9	0.230%
54	2,555	7	0.274%	7.7	0.300%	6.6	0.260%
55	2,464	7	0.284%	8.4	0.340%	7.1	0.290%
56	2,277	5	0.220%	8.2	0.360%	7.3	0.320%
57	2,070	4	0.193%	8.1	0.390%	7.2	0.350%
58	2,034	8	0.393%	8.5	0.420%	7.7	0.380%
59	1,857	4	0.215%	8.9	0.480%	7.6	0.410%
60	1,674	7	0.418%	9.0	0.540%	7.4	0.440%
61	1,352	12	0.888%	7.8	0.580%	6.4	0.470%
62	1,153	3	0.260%	7.1	0.620%	5.8	0.500%
63	920	2	0.217%	5.7	0.620%	4.9	0.530%
64	805	4	0.497%	-	0.000%	4.5	0.560%
	62,046	98	0.158%	118.6	0.191%	110.4	0.178%

Data Summary E-7
Rates of Disability
Special Services

Age	Exposure	Actual Disabilities	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	110	-	0.000%	0.2	0.225%	0.2	0.150%
26	211	-	0.000%	0.5	0.225%	0.3	0.150%
27	299	-	0.000%	0.7	0.225%	0.4	0.150%
28	388	-	0.000%	0.9	0.225%	0.6	0.150%
29	455	-	0.000%	1.0	0.225%	0.7	0.150%
30	500	-	0.000%	1.1	0.226%	0.8	0.150%
31	545	-	0.000%	1.2	0.228%	0.8	0.150%
32	565	-	0.000%	1.3	0.232%	0.8	0.150%
33	587	-	0.000%	1.4	0.237%	0.9	0.150%
34	655	1	0.153%	1.6	0.245%	1.0	0.150%
35	726	1	0.138%	1.9	0.256%	1.1	0.150%
36	754	-	0.000%	2.3	0.311%	1.1	0.150%
37	791	-	0.000%	2.9	0.368%	1.2	0.150%
38	802	1	0.125%	3.4	0.428%	1.2	0.150%
39	763	1	0.131%	3.7	0.480%	1.1	0.150%
40	764	-	0.000%	4.2	0.543%	1.2	0.160%
41	746	1	0.134%	4.8	0.648%	1.3	0.170%
42	750	1	0.133%	5.3	0.704%	1.4	0.180%
43	791	-	0.000%	7.1	0.900%	1.5	0.190%
44	815	-	0.000%	7.7	0.946%	1.6	0.200%
45	830	1	0.120%	8.8	1.054%	1.7	0.210%
46	840	1	0.119%	10.0	1.196%	1.8	0.220%
47	848	1	0.118%	11.0	1.302%	2.0	0.230%
48	843	1	0.119%	12.3	1.464%	2.0	0.240%
49	836	-	0.000%	13.6	1.624%	2.1	0.250%
50	820	1	0.122%	15.6	1.904%	2.1	0.260%
51	823	-	0.000%	19.4	2.355%	2.2	0.270%
52	788	3	0.381%	23.1	2.928%	2.2	0.280%
53	747	3	0.402%	29.0	3.886%	2.2	0.300%
54	724	5	0.691%	39.5	5.459%	2.3	0.320%
55	652	5	0.767%	26.5	4.062%	2.2	0.340%
56	562	2	0.356%	25.7	4.575%	2.0	0.360%
57	498	2	0.402%	25.9	5.201%	1.9	0.380%
58	465	2	0.430%	27.2	5.849%	1.9	0.400%
59	385	1	0.260%	25.3	6.572%	1.6	0.420%
60	308	1	0.325%	25.5	8.271%	1.4	0.450%
61	235	-	0.000%	22.2	9.441%	1.1	0.480%
62	190	1	0.526%	18.5	9.748%	1.0	0.510%
63	133	-	0.000%	13.4	10.092%	0.7	0.540%
64	102	-	0.000%	10.7	10.483%	0.6	0.570%
	23,646	36	0.152%	456.5	1.931%	54.4	0.230%

APPENDIX F

TERMINATION OF EMPLOYMENT

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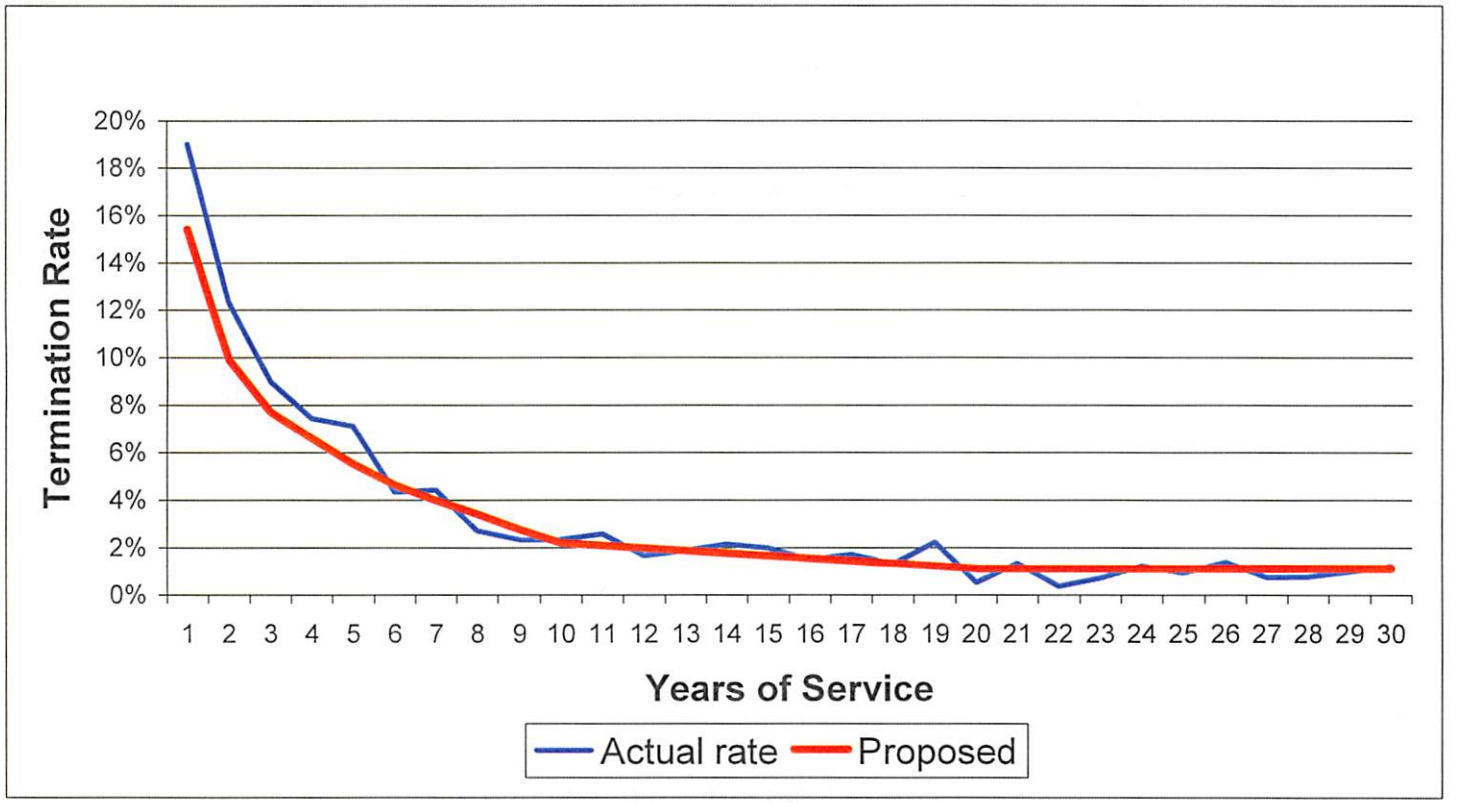
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-1

Termination of Employment

State Membership - Males



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,024	NA	903
Actual/Expected			113%

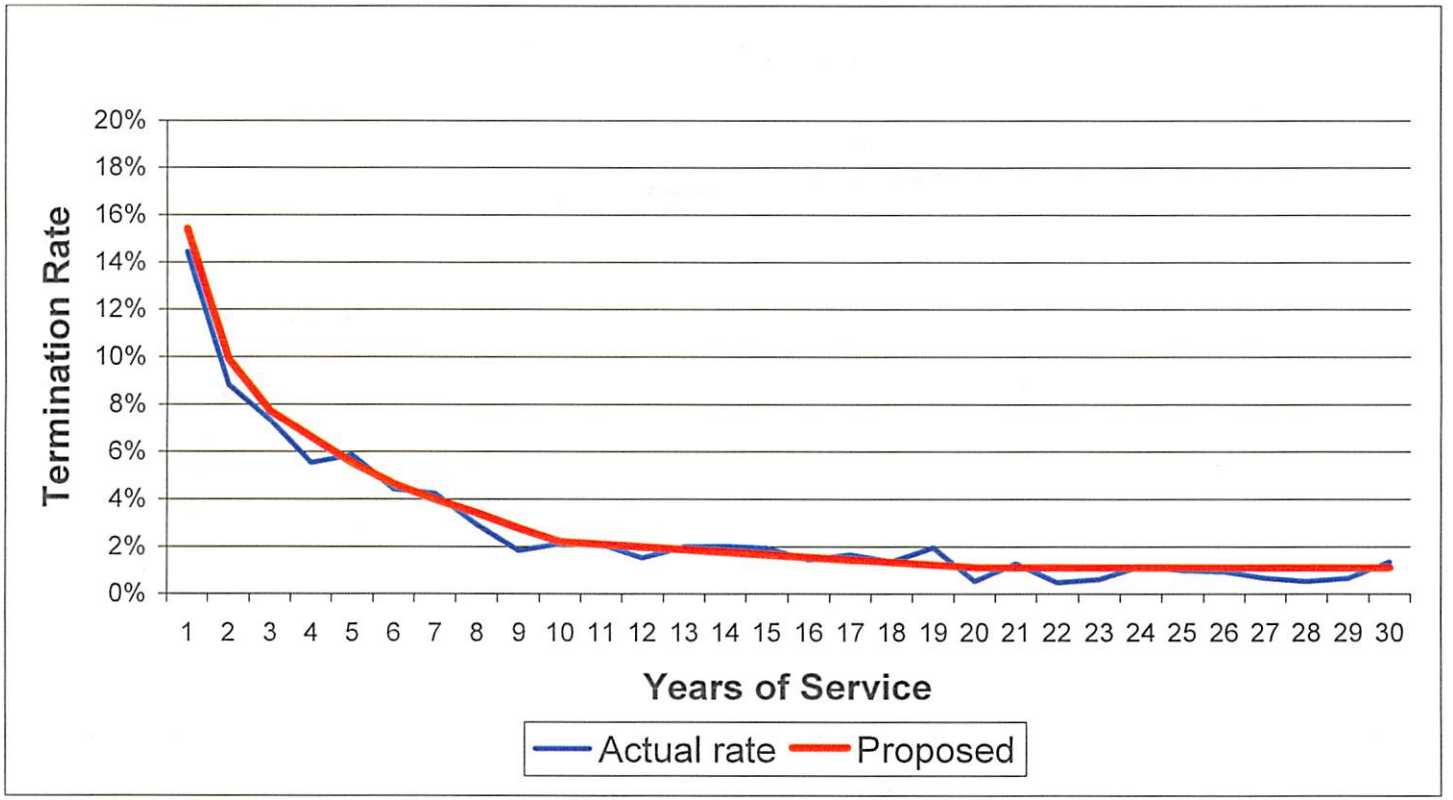
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-2

Termination of Employment

State Membership - Males (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	25,479	NA	27,769
Actual/Expected			92%

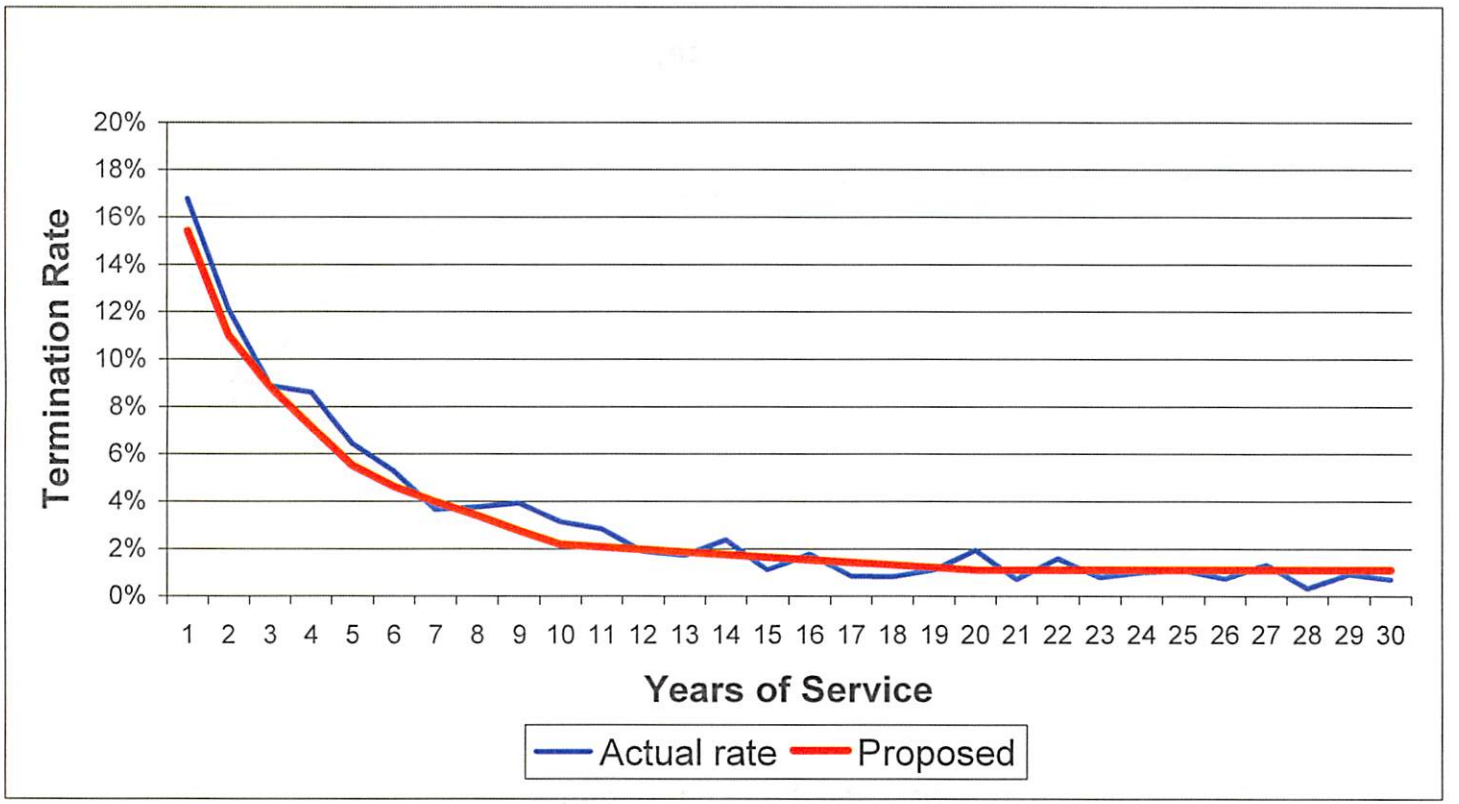
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-3

Termination of Employment

State Membership - Females



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,630	NA	1,502
Actual/Expected			109%

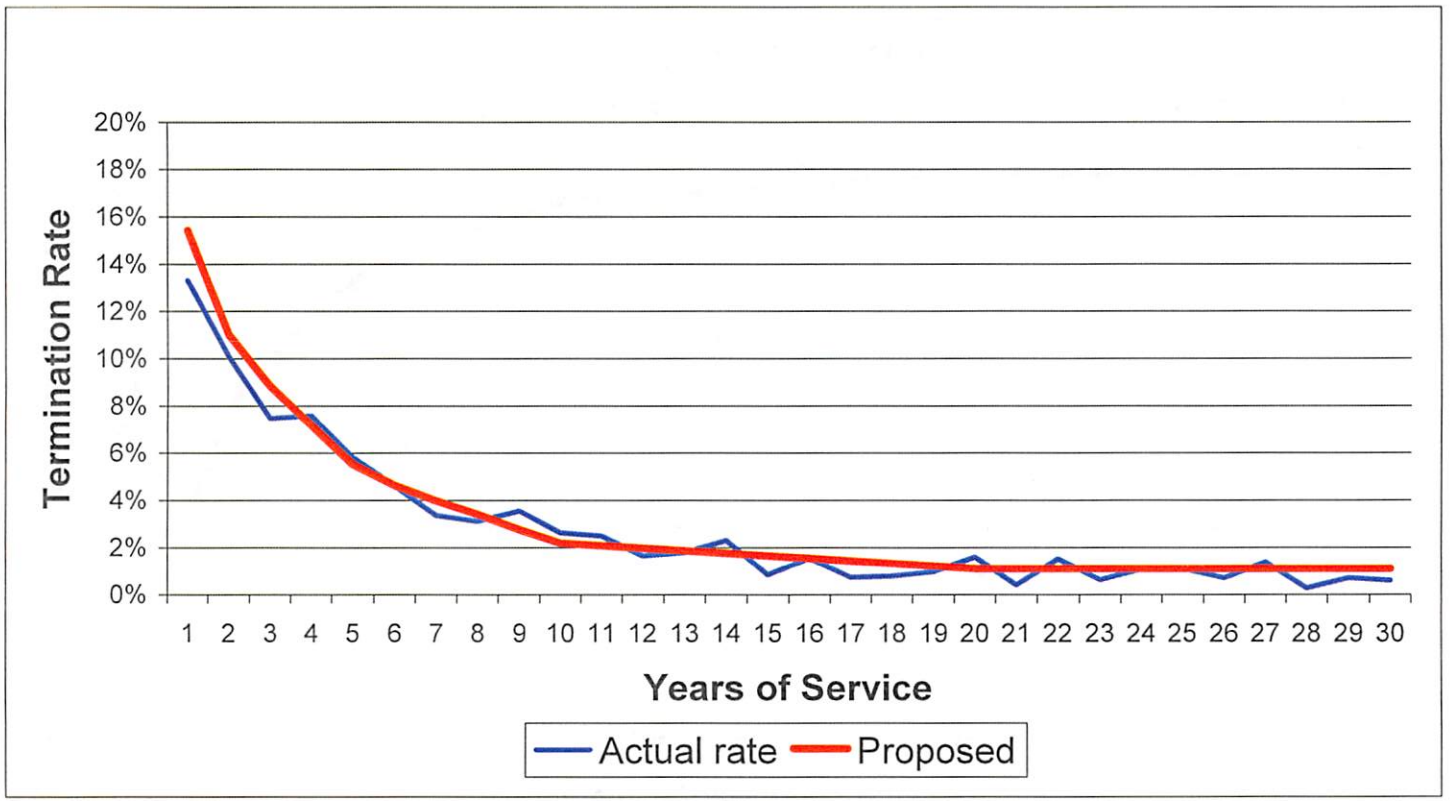
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-4

Termination of Employment

State Membership - Females (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	33,451	NA	37,511
Actual/Expected			89%

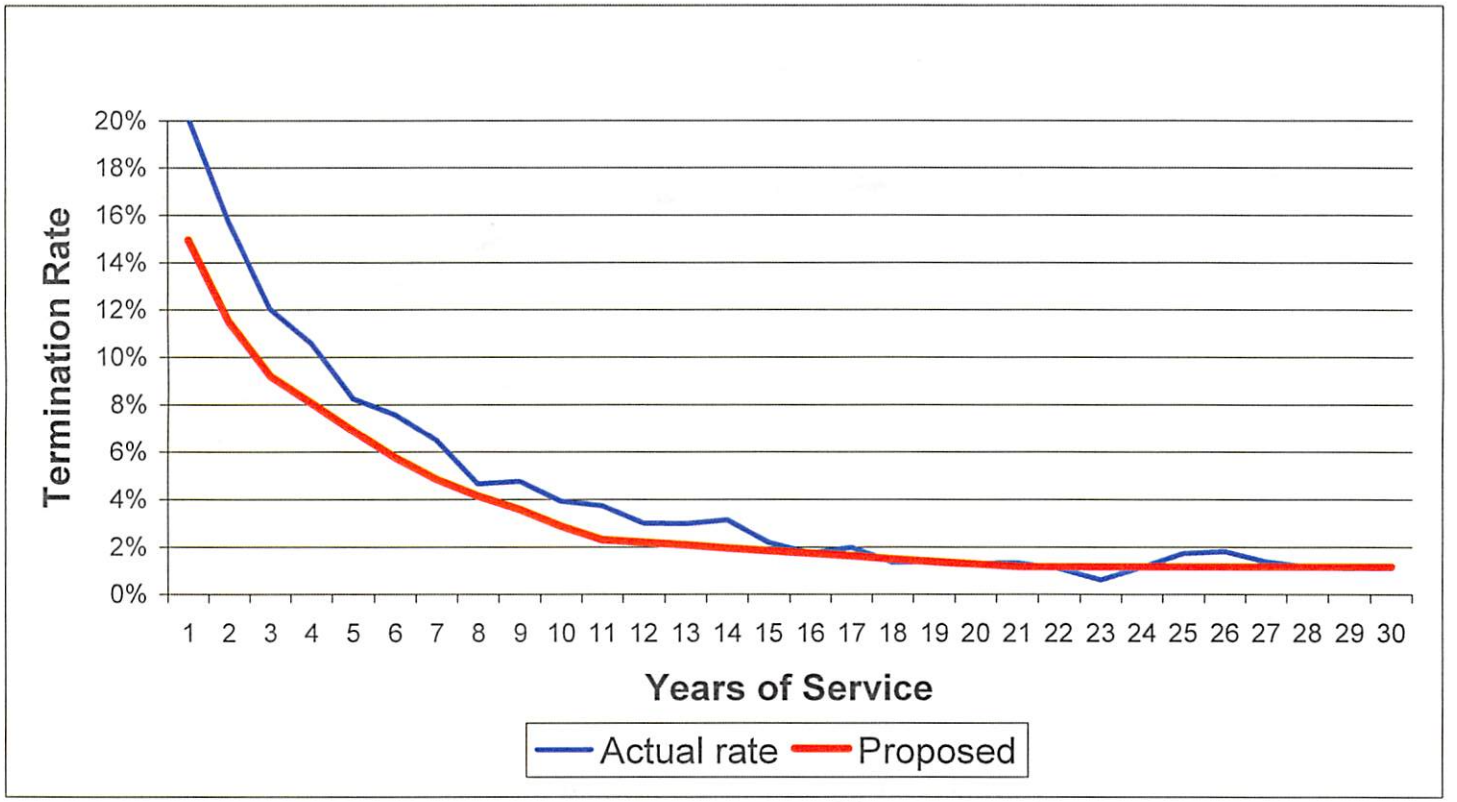
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-5

Termination of Employment

School Membership - Males



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	3,770	NA	2,880
Actual/Expected			131%

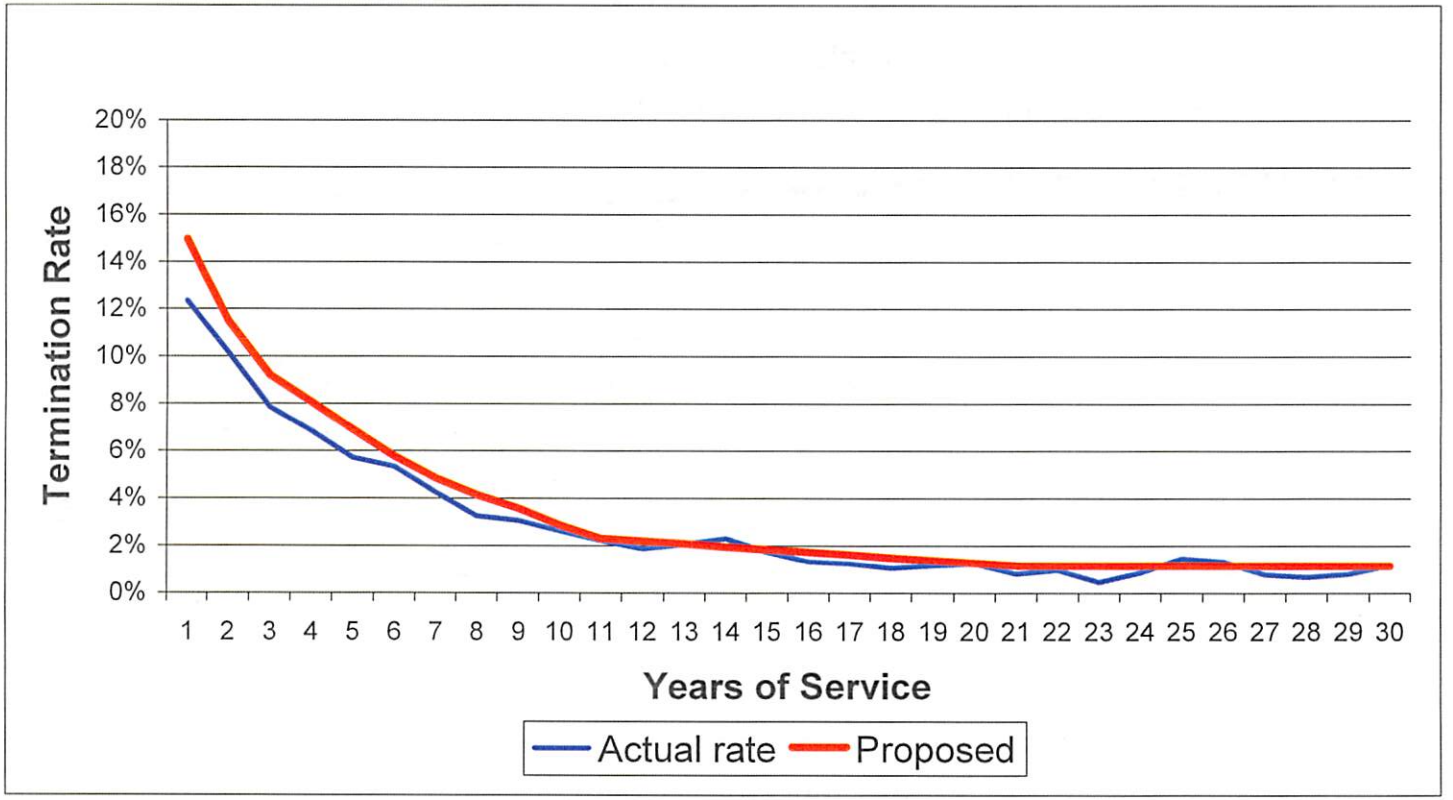
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-6

Termination of Employment

School Membership - Males (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	53,888	NA	62,012
Actual/Expected			87%

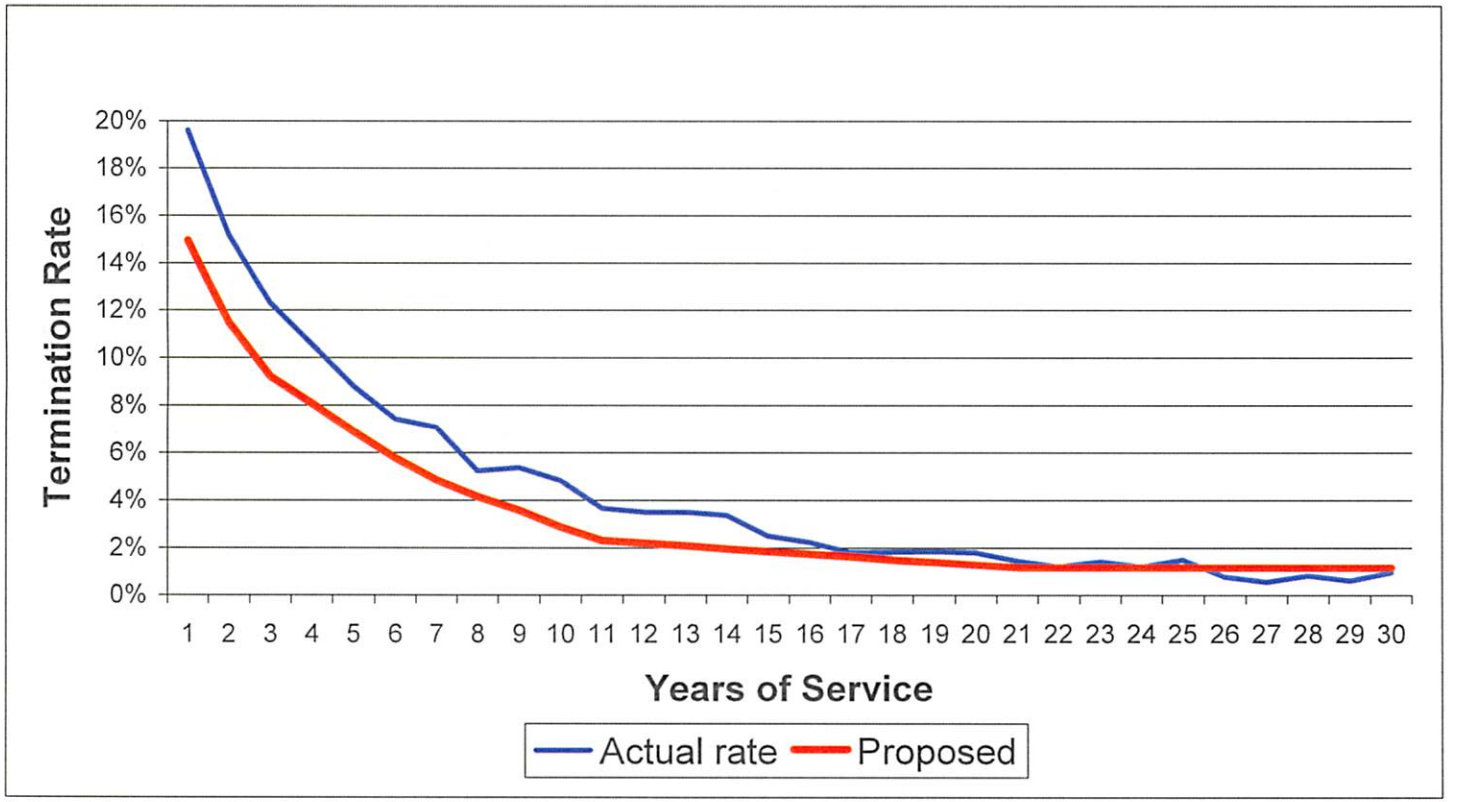
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-7

Termination of Employment

School Membership - Females



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	13,344	NA	10,004
Actual/Expected			133%

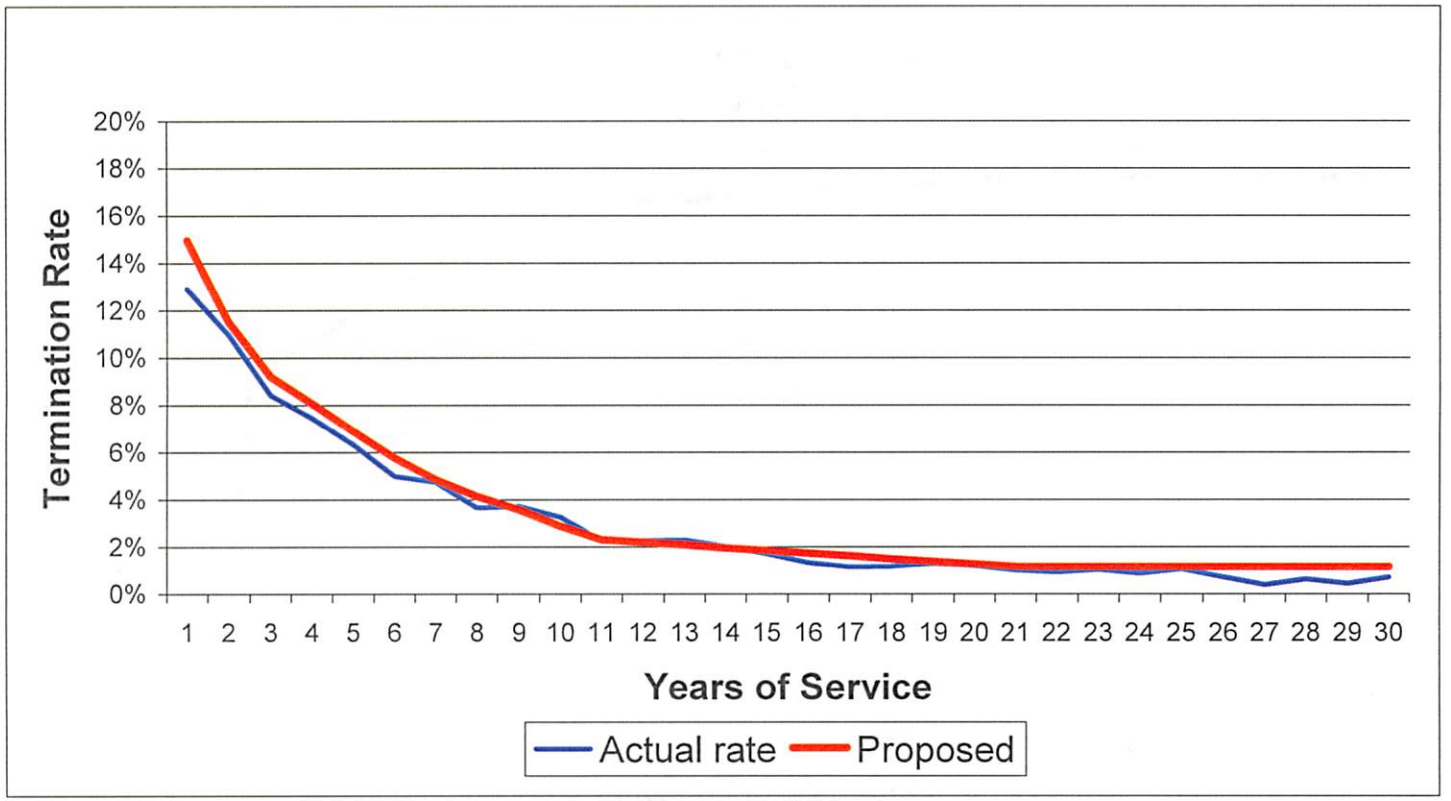
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-8

Termination of Employment

School Membership - Females (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	129,360	NA	147,076
Actual/Expected			88%

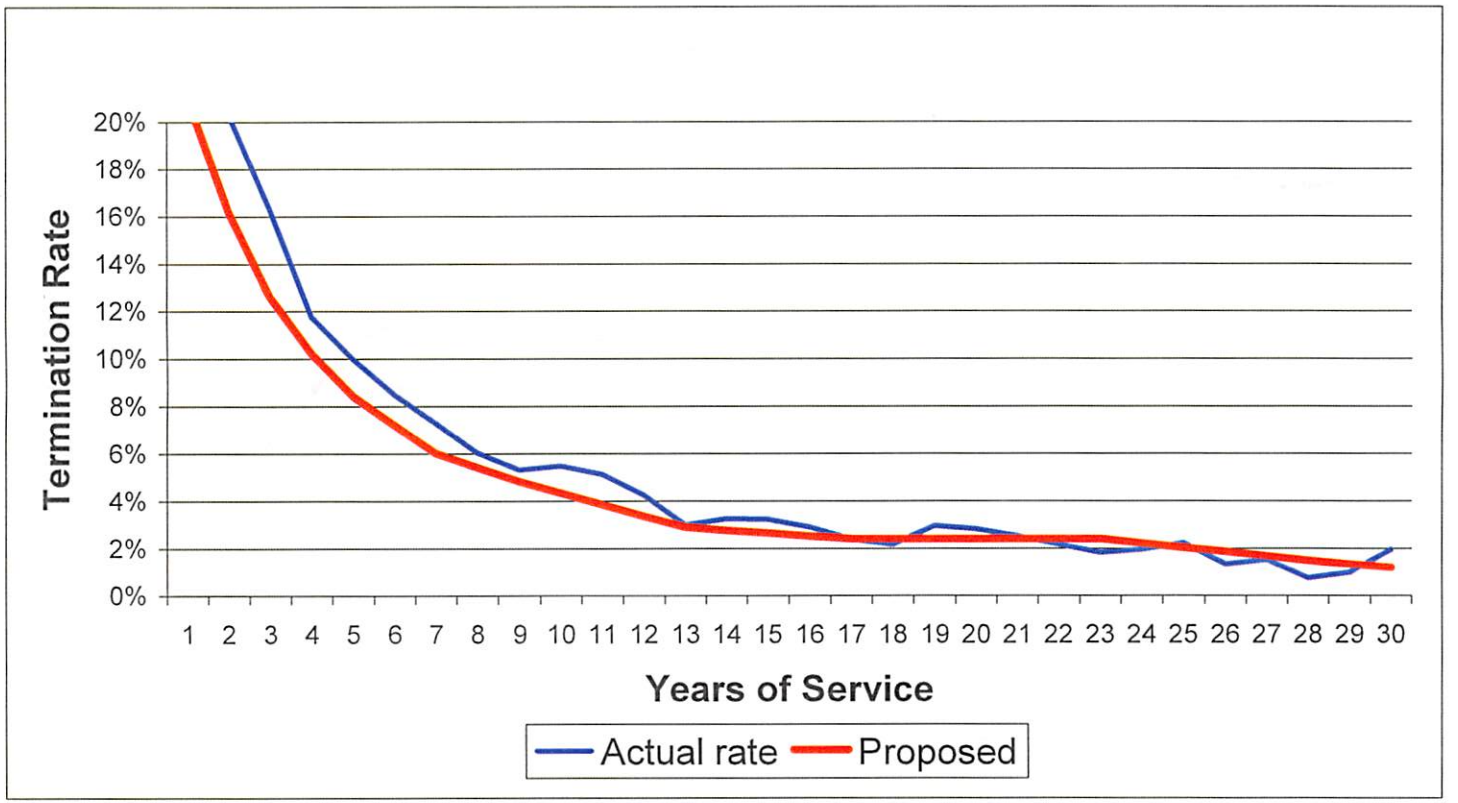
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-9

Termination of Employment

Other Membership - Males



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	4,989	NA	4,122
Actual/Expected			121%

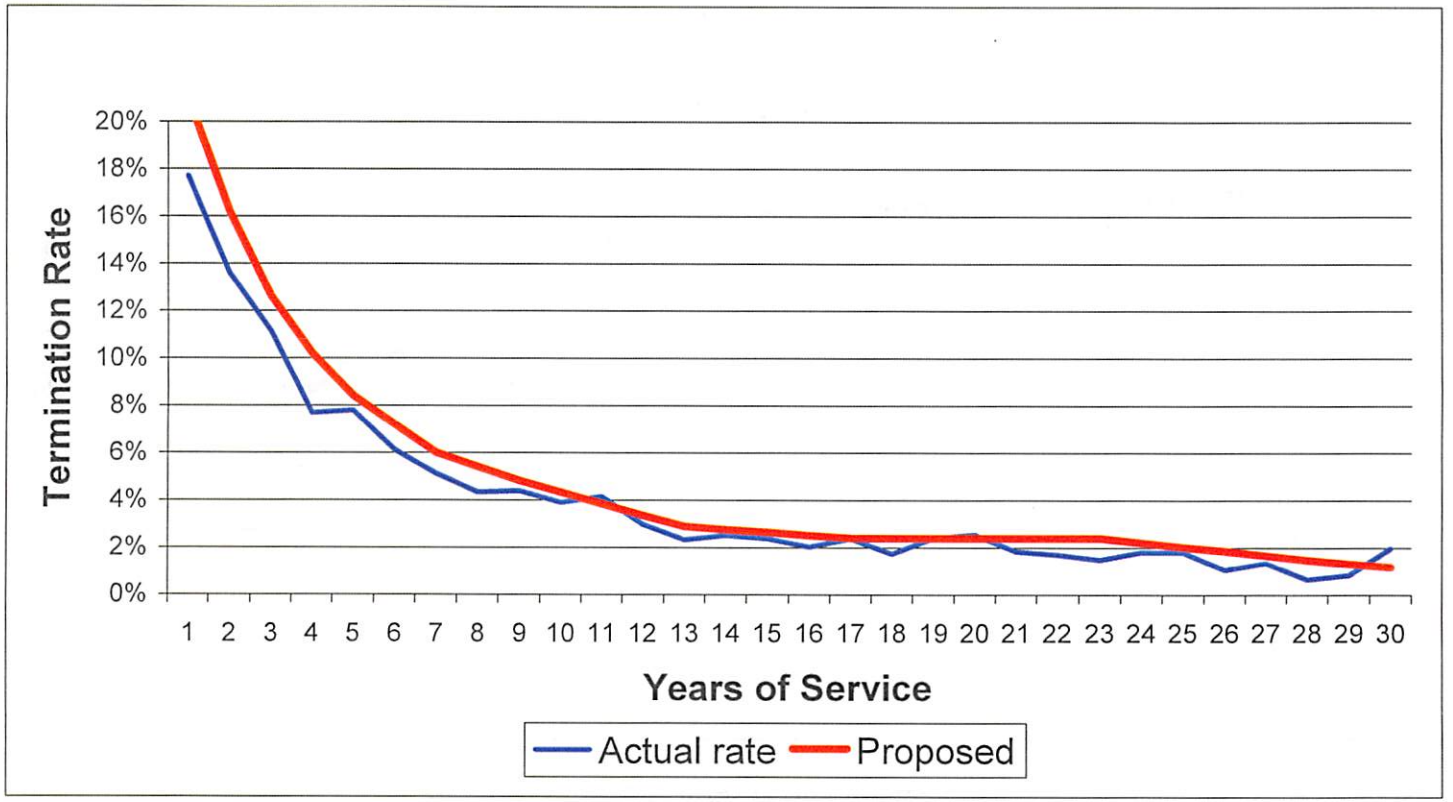
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-10

Termination of Employment

Other Membership - Males (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	73,939	NA	85,229
Actual/Expected			87%

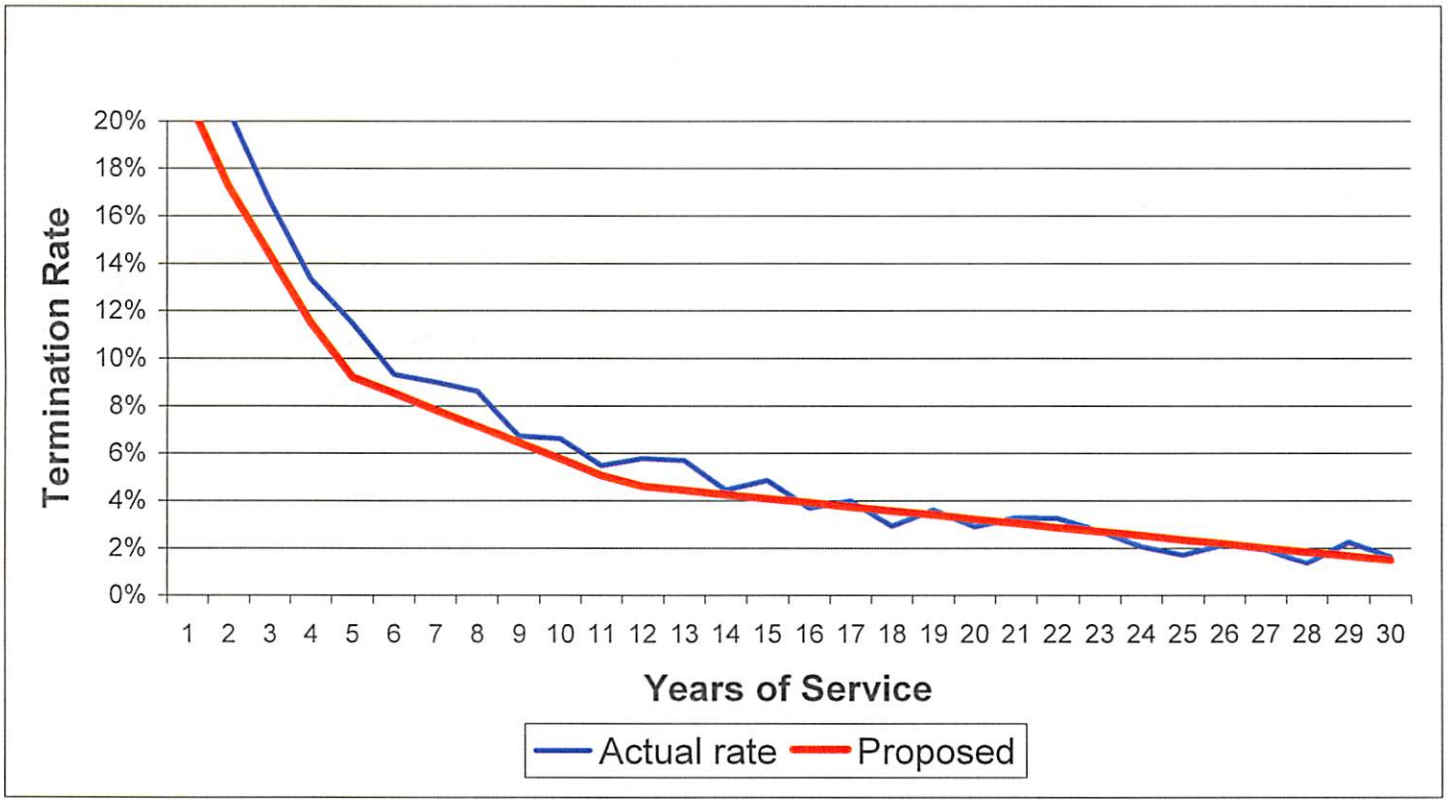
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-11

Termination of Employment

Other Membership - Females



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	9,981	NA	8,514
Actual/Expected			117%

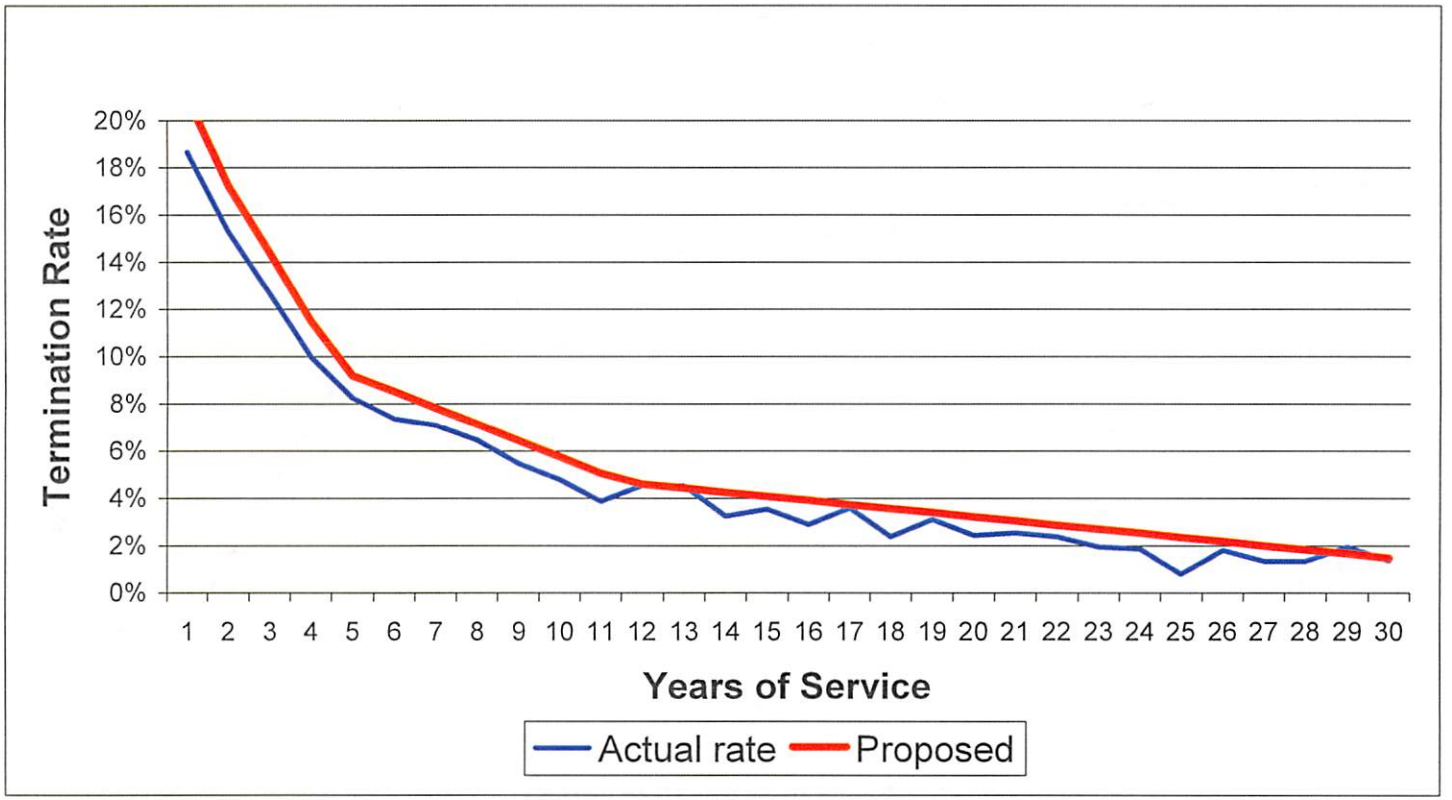
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit F-12

Termination of Employment

Other Membership - Females (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	111,891	NA	131,476
Actual/Expected			85%

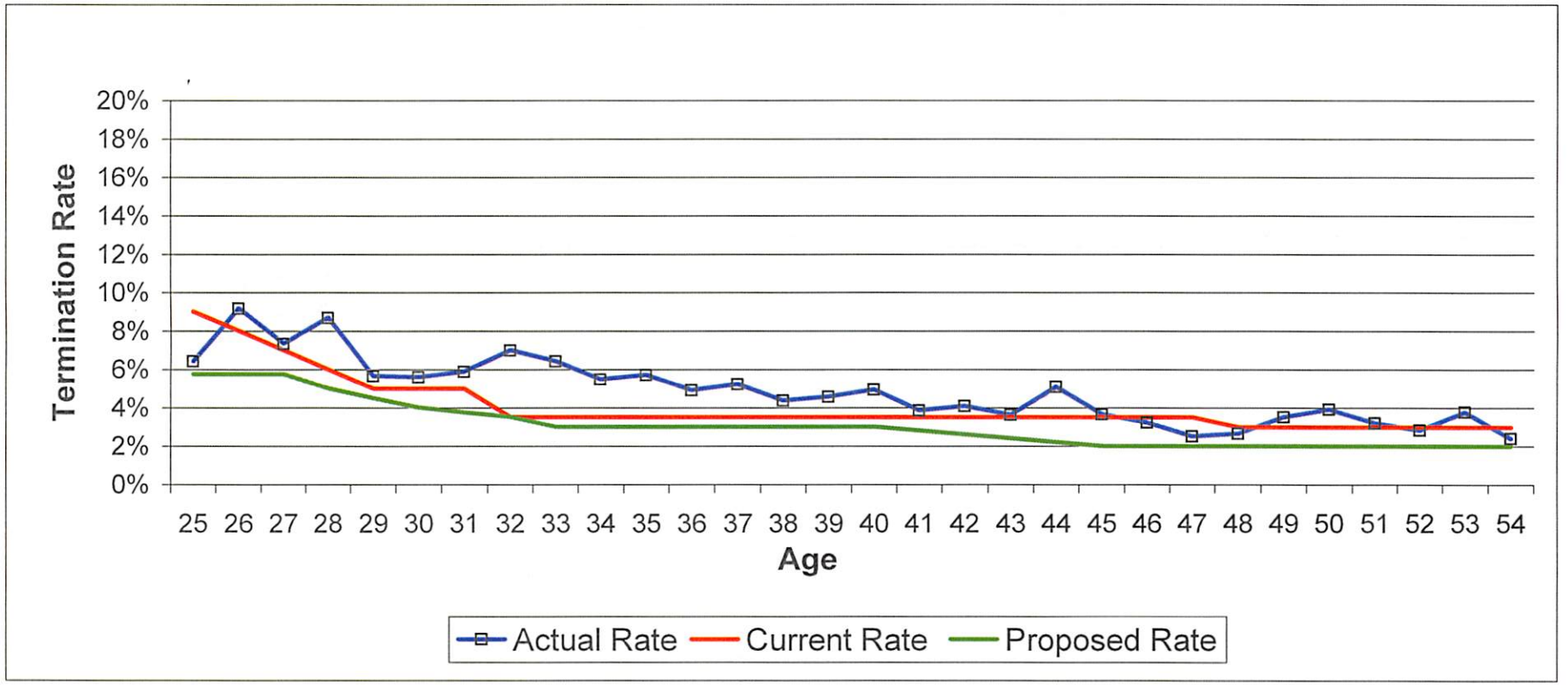
Iowa Public Employees' Retirement System

Experience Study 2005-2009

Exhibit F-13

Termination of Employment

Special Services Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,220	1,007	762
Actual/Expected		121%	160%

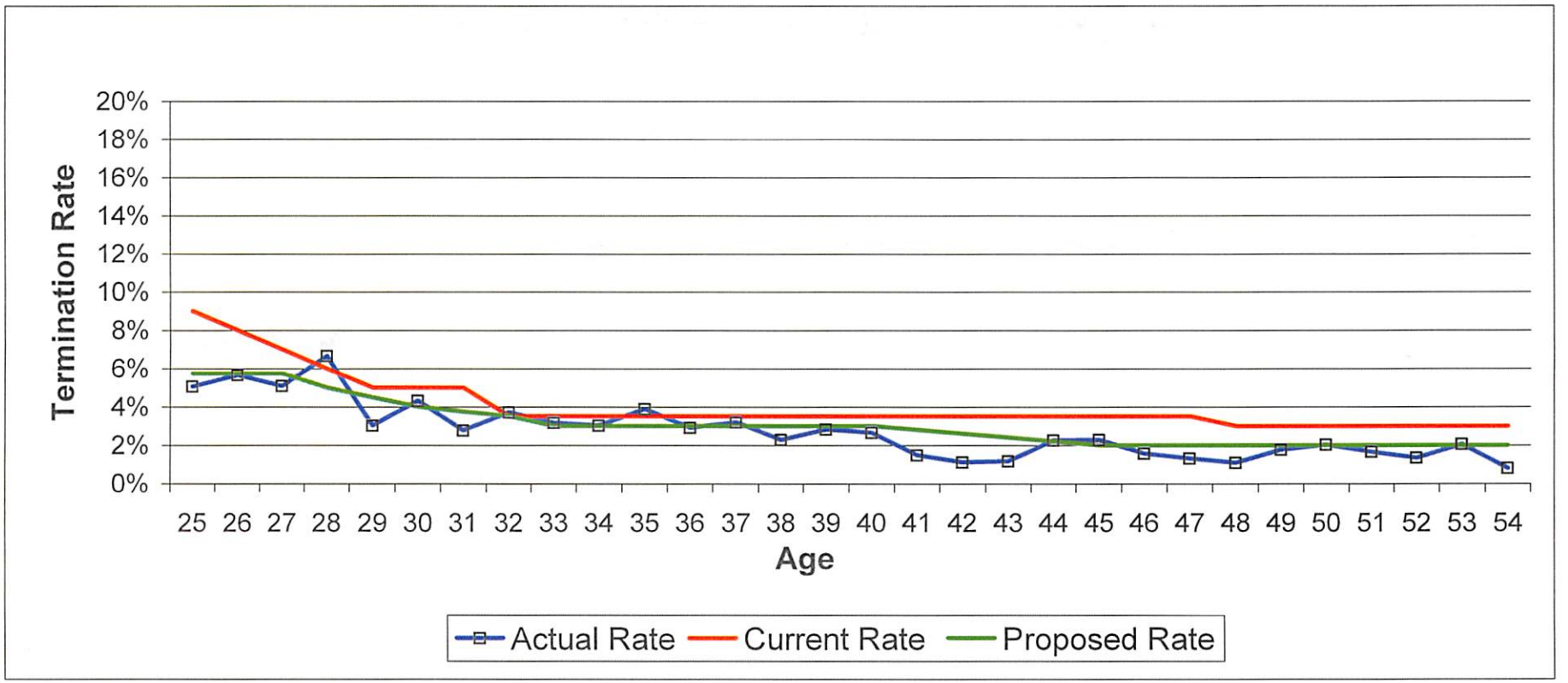
Iowa Public Employees' Retirement System

Experience Study 2005-2009

Exhibit F-14

Termination of Employment

Special Services Membership (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	23,870	39,539	28,532
Actual/Expected		60%	84%

Data Summary F-1
Termination of Employment
State Membership - Males

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	1,689	321	19.0%	260	15.4%
2	1,307	161	12.3%	129	9.9%
3	980	88	9.0%	75	7.7%
4	901	67	7.4%	59	6.6%
5	971	69	7.1%	53	5.5%
6	1,018	44	4.3%	47	4.6%
7	1,137	50	4.4%	45	4.0%
8	1,105	30	2.7%	38	3.4%
9	992	23	2.3%	27	2.8%
10	865	20	2.3%	19	2.2%
11	782	20	2.6%	16	2.1%
12	670	11	1.6%	13	2.0%
13	590	11	1.9%	11	1.9%
14	516	11	2.1%	9	1.8%
15	505	10	2.0%	8	1.7%
16	537	8	1.5%	8	1.5%
17	589	10	1.7%	8	1.4%
18	623	8	1.3%	8	1.3%
19	586	13	2.2%	7	1.2%
20	599	3	0.5%	7	1.1%
21	603	8	1.3%	7	1.1%
22	566	2	0.4%	6	1.1%
23	562	4	0.7%	6	1.1%
24	497	6	1.2%	5	1.1%
25	441	4	0.9%	5	1.1%
26	437	6	1.4%	5	1.1%
27	408	3	0.7%	4	1.1%
28	403	3	0.7%	4	1.1%
29	308	3	1.0%	3	1.1%
30	589	7	1.2%	6	1.1%
	21,776	1,024	4.7%	903	4.1%

Data Summary F-2
Termination of Employment
State Membership - Males (Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	5,807	838	14.4%	894	15.4%
2	10,261	904	8.8%	1,016	9.9%
3	12,886	943	7.3%	992	7.7%
4	16,340	900	5.5%	1,078	6.6%
5	22,909	1,340	5.9%	1,260	5.5%
6	29,141	1,288	4.4%	1,346	4.6%
7	39,084	1,644	4.2%	1,548	4.0%
8	44,470	1,300	2.9%	1,516	3.4%
9	46,659	842	1.8%	1,283	2.8%
10	46,337	978	2.1%	1,019	2.2%
11	46,156	965	2.1%	965	2.1%
12	43,903	659	1.5%	869	2.0%
13	42,417	841	2.0%	793	1.9%
14	40,114	803	2.0%	706	1.8%
15	42,812	824	1.9%	706	1.7%
16	48,658	701	1.4%	749	1.5%
17	57,556	954	1.7%	823	1.4%
18	65,147	884	1.4%	860	1.3%
19	64,717	1,262	1.9%	783	1.2%
20	70,044	353	0.5%	770	1.1%
21	74,728	949	1.3%	822	1.1%
22	73,911	348	0.5%	813	1.1%
23	77,573	466	0.6%	853	1.1%
24	70,870	817	1.2%	780	1.1%
25	63,618	626	1.0%	700	1.1%
26	64,793	594	0.9%	713	1.1%
27	63,321	417	0.7%	697	1.1%
28	65,449	341	0.5%	720	1.1%
29	51,738	332	0.6%	569	1.1%
30	102,176	1,367	1.3%	1,124	1.1%
	1,503,594	25,479	1.7%	27,769	1.8%

Data Summary F-3
Termination of Employment
State Membership - Females

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	2,780	466	16.8%	428	15.4%
2	2,263	274	12.1%	249	11.0%
3	1,705	151	8.9%	150	8.8%
4	1,476	127	8.6%	106	7.2%
5	1,526	98	6.4%	84	5.5%
6	1,576	83	5.3%	73	4.6%
7	1,701	62	3.6%	67	4.0%
8	1,618	61	3.8%	55	3.4%
9	1,408	55	3.9%	39	2.8%
10	1,248	39	3.1%	27	2.2%
11	1,089	31	2.8%	23	2.1%
12	956	18	1.9%	19	2.0%
13	808	14	1.7%	15	1.9%
14	718	17	2.4%	13	1.8%
15	721	8	1.1%	12	1.7%
16	840	15	1.8%	13	1.5%
17	949	8	0.8%	14	1.4%
18	1,001	8	0.8%	13	1.3%
19	902	10	1.1%	11	1.2%
20	876	17	1.9%	10	1.1%
21	846	6	0.7%	9	1.1%
22	757	12	1.6%	8	1.1%
23	764	6	0.8%	8	1.1%
24	695	7	1.0%	8	1.1%
25	649	7	1.1%	7	1.1%
26	692	5	0.7%	8	1.1%
27	683	9	1.3%	8	1.1%
28	639	2	0.3%	7	1.1%
29	538	5	0.9%	6	1.1%
30	1,257	9	0.7%	14	1.1%
	33,681	1,630	4.8%	1,502	4.5%

Data Summary F-4
Termination of Employment
State Membership - Females (Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	8,287	1,103	13.3%	1,276	15.4%
2	15,326	1,544	10.1%	1,686	11.0%
3	18,554	1,382	7.5%	1,633	8.8%
4	22,506	1,706	7.6%	1,609	7.2%
5	29,796	1,734	5.8%	1,639	5.5%
6	37,556	1,726	4.6%	1,735	4.6%
7	49,512	1,665	3.4%	1,961	4.0%
8	55,119	1,710	3.1%	1,880	3.4%
9	56,480	2,002	3.5%	1,553	2.8%
10	56,949	1,500	2.6%	1,253	2.2%
11	55,460	1,385	2.5%	1,159	2.1%
12	54,426	900	1.7%	1,078	2.0%
13	50,978	903	1.8%	953	1.9%
14	48,343	1,107	2.3%	851	1.8%
15	52,241	443	0.8%	862	1.7%
16	65,787	1,007	1.5%	1,013	1.5%
17	79,527	590	0.7%	1,137	1.4%
18	90,652	699	0.8%	1,197	1.3%
19	87,610	843	1.0%	1,060	1.2%
20	89,373	1,435	1.6%	983	1.1%
21	91,191	379	0.4%	1,003	1.1%
22	86,572	1,304	1.5%	952	1.1%
23	93,303	570	0.6%	1,026	1.1%
24	88,395	966	1.1%	972	1.1%
25	83,508	919	1.1%	919	1.1%
26	92,298	652	0.7%	1,015	1.1%
27	96,445	1,321	1.4%	1,061	1.1%
28	93,076	240	0.3%	1,024	1.1%
29	81,563	569	0.7%	897	1.1%
30	193,044	1,145	0.6%	2,123	1.1%
	2,023,877	33,451	1.7%	37,511	1.9%

Data Summary F-5
Termination of Employment
School Membership - Males

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	5,184	1,042	20.1%	775	15.0%
2	4,054	637	15.7%	466	11.5%
3	3,392	408	12.0%	312	9.2%
4	3,011	318	10.6%	242	8.1%
5	2,788	230	8.2%	192	6.9%
6	2,674	202	7.6%	154	5.8%
7	2,589	168	6.5%	125	4.8%
8	2,474	115	4.6%	102	4.1%
9	2,298	109	4.7%	82	3.6%
10	2,074	81	3.9%	60	2.9%
11	1,908	71	3.7%	44	2.3%
12	1,770	53	3.0%	39	2.2%
13	1,609	48	3.0%	33	2.1%
14	1,530	48	3.1%	30	2.0%
15	1,416	31	2.2%	26	1.8%
16	1,281	22	1.7%	22	1.7%
17	1,160	23	2.0%	19	1.6%
18	1,106	15	1.4%	17	1.5%
19	1,023	14	1.4%	14	1.4%
20	1,006	13	1.3%	13	1.3%
21	978	13	1.3%	11	1.2%
22	928	10	1.1%	11	1.2%
23	859	5	0.6%	10	1.2%
24	802	9	1.1%	9	1.2%
25	813	14	1.7%	9	1.2%
26	828	15	1.8%	10	1.2%
27	863	12	1.4%	10	1.2%
28	941	11	1.2%	11	1.2%
29	924	10	1.1%	11	1.2%
30	1,931	23	1.2%	22	1.2%
	54,214	3,770	7.0%	2,880	5.3%

Data Summary F-6
Termination of Employment
School Membership - Males (Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	10,546	1,299	12.3%	1,577	15.0%
2	20,873	2,123	10.2%	2,400	11.5%
3	29,091	2,281	7.8%	2,676	9.2%
4	37,096	2,538	6.8%	2,986	8.1%
5	46,179	2,628	5.7%	3,186	6.9%
6	56,568	3,005	5.3%	3,253	5.8%
7	67,795	2,881	4.2%	3,275	4.8%
8	77,481	2,519	3.3%	3,208	4.1%
9	84,560	2,578	3.0%	3,015	3.6%
10	88,124	2,299	2.6%	2,534	2.9%
11	92,277	2,043	2.2%	2,122	2.3%
12	95,999	1,801	1.9%	2,098	2.2%
13	96,532	1,992	2.1%	1,998	2.1%
14	103,012	2,364	2.3%	2,014	2.0%
15	105,431	1,836	1.7%	1,940	1.8%
16	104,066	1,367	1.3%	1,795	1.7%
17	101,127	1,254	1.2%	1,628	1.6%
18	101,356	1,070	1.1%	1,515	1.5%
19	99,406	1,154	1.2%	1,372	1.4%
20	103,477	1,280	1.2%	1,309	1.3%
21	105,763	859	0.8%	1,216	1.2%
22	108,883	1,051	1.0%	1,252	1.2%
23	106,397	493	0.5%	1,224	1.2%
24	104,412	908	0.9%	1,201	1.2%
25	111,973	1,637	1.5%	1,288	1.2%
26	114,406	1,511	1.3%	1,316	1.2%
27	124,902	991	0.8%	1,436	1.2%
28	145,539	994	0.7%	1,674	1.2%
29	151,341	1,211	0.8%	1,740	1.2%
30	327,417	3,920	1.2%	3,765	1.2%
	2,922,031	53,888	1.8%	62,012	2.1%

Data Summary F-7
Termination of Employment
School Membership - Females

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	17,683	3,464	19.6%	2,644	15.0%
2	14,544	2,211	15.2%	1,673	11.5%
3	12,155	1,494	12.3%	1,118	9.2%
4	11,016	1,160	10.5%	887	8.1%
5	10,479	921	8.8%	723	6.9%
6	10,055	744	7.4%	578	5.8%
7	9,509	670	7.0%	459	4.8%
8	8,801	460	5.2%	364	4.1%
9	7,936	424	5.3%	283	3.6%
10	7,195	346	4.8%	207	2.9%
11	6,545	239	3.7%	151	2.3%
12	6,062	211	3.5%	132	2.2%
13	5,414	189	3.5%	112	2.1%
14	4,872	163	3.3%	95	2.0%
15	4,461	111	2.5%	82	1.8%
16	4,029	89	2.2%	70	1.7%
17	3,770	67	1.8%	61	1.6%
18	3,332	60	1.8%	50	1.5%
19	2,957	54	1.8%	41	1.4%
20	2,704	48	1.8%	34	1.3%
21	2,493	36	1.4%	29	1.2%
22	2,281	27	1.2%	26	1.2%
23	1,985	28	1.4%	23	1.2%
24	1,757	21	1.2%	20	1.2%
25	1,678	25	1.5%	19	1.2%
26	1,745	13	0.7%	20	1.2%
27	1,811	10	0.6%	21	1.2%
28	1,848	15	0.8%	21	1.2%
29	1,717	10	0.6%	20	1.2%
30	3,628	34	0.9%	42	1.2%
	174,462	13,344	7.6%	10,004	5.7%

Data Summary F-8
Termination of Employment
School Membership - Females (Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	27,984	3,609	12.9%	4,184	15.0%
2	58,172	6,364	10.9%	6,690	11.5%
3	80,173	6,732	8.4%	7,376	9.2%
4	102,057	7,572	7.4%	8,216	8.1%
5	127,167	8,038	6.3%	8,775	6.9%
6	152,125	7,546	5.0%	8,747	5.8%
7	176,586	8,358	4.7%	8,529	4.8%
8	195,367	7,133	3.7%	8,088	4.1%
9	206,226	7,663	3.7%	7,352	3.6%
10	215,140	6,978	3.2%	6,185	2.9%
11	225,995	5,056	2.2%	5,198	2.3%
12	237,653	5,330	2.2%	5,193	2.2%
13	238,196	5,413	2.3%	4,931	2.1%
14	243,556	4,861	2.0%	4,762	2.0%
15	247,668	4,186	1.7%	4,557	1.8%
16	244,456	3,227	1.3%	4,217	1.7%
17	254,221	2,859	1.1%	4,093	1.6%
18	246,495	2,876	1.2%	3,685	1.5%
19	240,121	3,099	1.3%	3,314	1.4%
20	237,830	2,837	1.2%	3,009	1.3%
21	235,806	2,344	1.0%	2,712	1.2%
22	231,643	2,145	0.9%	2,664	1.2%
23	217,782	2,212	1.0%	2,504	1.2%
24	204,136	1,779	0.9%	2,348	1.2%
25	201,159	2,094	1.0%	2,313	1.2%
26	218,452	1,539	0.7%	2,512	1.2%
27	238,448	913	0.4%	2,742	1.2%
28	257,863	1,569	0.6%	2,965	1.2%
29	252,719	1,098	0.4%	2,906	1.2%
30	548,750	3,929	0.7%	6,311	1.2%
	6,363,946	129,360	2.0%	147,076	2.3%

Data Summary F-9
Termination of Employment
Other Membership - Males

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	5,740	1,501	26.1%	1,205	21.0%
2	4,207	855	20.3%	682	16.2%
3	3,423	558	16.3%	431	12.6%
4	3,076	362	11.8%	314	10.2%
5	3,059	305	10.0%	257	8.4%
6	3,025	256	8.5%	218	7.2%
7	2,815	205	7.3%	169	6.0%
8	2,477	149	6.0%	134	5.4%
9	2,118	112	5.3%	102	4.8%
10	1,905	104	5.5%	82	4.3%
11	1,726	88	5.1%	66	3.8%
12	1,555	66	4.2%	52	3.4%
13	1,441	43	3.0%	42	2.9%
14	1,324	43	3.2%	37	2.8%
15	1,340	43	3.2%	35	2.6%
16	1,319	38	2.9%	33	2.5%
17	1,297	31	2.4%	31	2.4%
18	1,159	25	2.2%	28	2.4%
19	987	29	2.9%	24	2.4%
20	893	25	2.8%	21	2.4%
21	834	21	2.5%	20	2.4%
22	787	17	2.2%	19	2.4%
23	777	14	1.8%	19	2.4%
24	719	14	1.9%	16	2.2%
25	763	17	2.2%	16	2.0%
26	835	11	1.3%	16	1.9%
27	852	13	1.5%	14	1.7%
28	810	6	0.7%	12	1.5%
29	711	7	1.0%	9	1.3%
30	1,600	31	1.9%	19	1.2%
	53,574	4,989	9.3%	4,122	7.7%

Data Summary F-10
Termination of Employment
Other Membership - Males (Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	14,164	2,504	17.7%	2,974	21.0%
2	25,133	3,419	13.6%	4,071	16.2%
3	33,974	3,772	11.1%	4,281	12.6%
4	43,421	3,336	7.7%	4,429	10.2%
5	57,292	4,465	7.8%	4,813	8.4%
6	69,351	4,235	6.1%	4,993	7.2%
7	77,463	3,960	5.1%	4,648	6.0%
8	81,072	3,506	4.3%	4,378	5.4%
9	79,185	3,475	4.4%	3,801	4.8%
10	80,477	3,141	3.9%	3,477	4.3%
11	81,789	3,374	4.1%	3,141	3.8%
12	82,257	2,450	3.0%	2,764	3.4%
13	83,299	1,941	2.3%	2,399	2.9%
14	81,695	2,046	2.5%	2,255	2.8%
15	90,674	2,159	2.4%	2,394	2.6%
16	96,163	1,943	2.0%	2,423	2.5%
17	102,020	2,430	2.4%	2,448	2.4%
18	97,755	1,692	1.7%	2,346	2.4%
19	87,751	2,100	2.4%	2,106	2.4%
20	82,940	2,108	2.5%	1,991	2.4%
21	81,666	1,500	1.8%	1,960	2.4%
22	80,941	1,370	1.7%	1,943	2.4%
23	83,963	1,240	1.5%	2,015	2.4%
24	82,576	1,499	1.8%	1,833	2.2%
25	90,986	1,654	1.8%	1,856	2.0%
26	102,960	1,079	1.0%	1,915	1.9%
27	110,818	1,495	1.3%	1,862	1.7%
28	109,459	709	0.6%	1,642	1.5%
29	99,476	830	0.8%	1,313	1.3%
30	229,906	4,506	2.0%	2,759	1.2%
	2,520,626	73,939	2.9%	85,229	3.4%

Data Summary F-11
Termination of Employment
Other Membership - Females

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	11,637	2,999	25.8%	2,442	21.0%
2	8,376	1,713	20.5%	1,445	17.3%
3	6,674	1,112	16.7%	959	14.4%
4	5,757	769	13.4%	662	11.5%
5	5,321	611	11.5%	490	9.2%
6	5,213	484	9.3%	444	8.5%
7	4,776	428	9.0%	373	7.8%
8	4,178	359	8.6%	298	7.1%
9	3,627	243	6.7%	234	6.4%
10	3,064	202	6.6%	176	5.8%
11	2,699	147	5.4%	137	5.1%
12	2,522	145	5.7%	116	4.6%
13	2,220	126	5.7%	98	4.4%
14	1,964	87	4.4%	84	4.3%
15	1,905	92	4.8%	78	4.1%
16	1,823	67	3.7%	71	3.9%
17	1,762	70	4.0%	66	3.7%
18	1,603	47	2.9%	57	3.6%
19	1,395	50	3.6%	47	3.4%
20	1,207	35	2.9%	39	3.2%
21	1,009	33	3.3%	31	3.0%
22	863	28	3.2%	25	2.9%
23	816	22	2.7%	22	2.7%
24	784	16	2.0%	20	2.5%
25	816	14	1.7%	19	2.4%
26	889	19	2.1%	19	2.2%
27	835	16	1.9%	17	2.0%
28	745	10	1.3%	14	1.8%
29	625	14	2.2%	10	1.7%
30	1,408	23	1.6%	21	1.5%
	86,513	9,981	11.5%	8,514	9.8%

Data Summary F-12
Termination of Employment
Other Membership - Females (Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	23,094	4,302	18.6%	4,847	21.0%
2	39,285	6,006	15.3%	6,777	17.3%
3	51,091	6,462	12.6%	7,344	14.4%
4	61,798	6,169	10.0%	7,107	11.5%
5	74,649	6,151	8.2%	6,868	9.2%
6	90,440	6,660	7.4%	7,696	8.5%
7	99,405	7,032	7.1%	7,774	7.8%
8	103,812	6,698	6.5%	7,402	7.1%
9	104,033	5,672	5.5%	6,700	6.4%
10	100,920	4,831	4.8%	5,803	5.8%
11	100,604	3,897	3.9%	5,091	5.1%
12	102,760	4,662	4.5%	4,727	4.6%
13	98,278	4,441	4.5%	4,351	4.4%
14	95,178	3,091	3.2%	4,050	4.3%
15	100,932	3,564	3.5%	4,121	4.1%
16	107,003	3,097	2.9%	4,184	3.9%
17	112,672	4,035	3.6%	4,211	3.7%
18	112,310	2,678	2.4%	4,004	3.6%
19	106,522	3,309	3.1%	3,614	3.4%
20	99,780	2,440	2.4%	3,213	3.2%
21	88,971	2,249	2.5%	2,711	3.0%
22	79,229	1,892	2.4%	2,278	2.9%
23	80,950	1,571	1.9%	2,188	2.7%
24	81,872	1,522	1.9%	2,071	2.5%
25	89,280	698	0.8%	2,105	2.4%
26	101,050	1,842	1.8%	2,208	2.2%
27	100,472	1,359	1.4%	2,022	2.0%
28	95,410	1,282	1.3%	1,756	1.8%
29	82,430	1,609	2.0%	1,375	1.7%
30	192,758	2,670	1.4%	2,882	1.5%
	2,776,988	111,891	4.0%	131,476	4.7%

Data Summary F-13
Termination of Employment
Special Services Membership

Age	Exposure	Actual Terminations	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	576	37	6.4%	51.8	9.0%	33.1	5.8%
26	675	62	9.2%	54.0	8.0%	38.8	5.8%
27	695	51	7.3%	48.7	7.0%	40.0	5.8%
28	760	66	8.7%	45.6	6.0%	38.0	5.0%
29	778	44	5.7%	38.9	5.0%	35.0	4.5%
30	804	45	5.6%	40.2	5.0%	32.2	4.0%
31	817	48	5.9%	40.9	5.0%	30.6	3.8%
32	813	57	7.0%	28.5	3.5%	28.5	3.5%
33	809	52	6.4%	28.3	3.5%	24.3	3.0%
34	893	49	5.5%	31.3	3.5%	26.8	3.0%
35	982	56	5.7%	34.4	3.5%	29.5	3.0%
36	995	49	4.9%	34.8	3.5%	29.9	3.0%
37	1,011	53	5.2%	35.4	3.5%	30.3	3.0%
38	1,006	44	4.4%	35.2	3.5%	30.2	3.0%
39	940	43	4.6%	32.9	3.5%	28.2	3.0%
40	932	46	4.9%	32.6	3.5%	28.0	3.0%
41	930	36	3.9%	32.6	3.5%	26.0	2.8%
42	906	37	4.1%	31.7	3.5%	23.6	2.6%
43	938	34	3.6%	32.8	3.5%	22.5	2.4%
44	964	49	5.1%	33.7	3.5%	21.2	2.2%
45	959	35	3.6%	33.6	3.5%	19.2	2.0%
46	961	31	3.2%	33.6	3.5%	19.2	2.0%
47	958	24	2.5%	33.5	3.5%	19.2	2.0%
48	941	25	2.7%	28.2	3.0%	18.8	2.0%
49	936	33	3.5%	28.1	3.0%	18.7	2.0%
50	739	29	3.9%	22.2	3.0%	14.8	2.0%
51	721	23	3.2%	21.6	3.0%	14.4	2.0%
52	705	20	2.8%	21.1	3.0%	14.1	2.0%
53	692	26	3.8%	20.8	3.0%	13.8	2.0%
54	669	16	2.4%	20.1	3.0%	13.4	2.0%
	25,505	1,220	4.8%	1,007.0	3.9%	762.1	3.0%

Data Summary F-14
Termination of Employment
Special Services Membership (Weighted)

Age	Exposure	Actual Terminations	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
25	3,825	194	5.1%	344.3	9.0%	219.9	5.8%
26	5,933	336	5.7%	474.6	8.0%	341.1	5.8%
27	8,187	417	5.1%	573.1	7.0%	470.8	5.8%
28	10,462	697	6.7%	627.7	6.0%	523.1	5.0%
29	12,596	382	3.0%	629.8	5.0%	566.8	4.5%
30	14,813	640	4.3%	740.7	5.0%	592.5	4.0%
31	16,945	468	2.8%	847.2	5.0%	635.4	3.8%
32	19,184	711	3.7%	671.4	3.5%	671.4	3.5%
33	21,066	666	3.2%	737.3	3.5%	632.0	3.0%
34	25,185	761	3.0%	881.5	3.5%	755.5	3.0%
35	29,655	1,151	3.9%	1,037.9	3.5%	889.6	3.0%
36	32,674	952	2.9%	1,143.6	3.5%	980.2	3.0%
37	36,041	1,155	3.2%	1,261.4	3.5%	1,081.2	3.0%
38	38,723	890	2.3%	1,355.3	3.5%	1,161.7	3.0%
39	38,819	1,095	2.8%	1,358.7	3.5%	1,164.6	3.0%
40	41,937	1,115	2.7%	1,467.8	3.5%	1,258.1	3.0%
41	43,784	655	1.5%	1,532.4	3.5%	1,225.9	2.8%
42	45,528	505	1.1%	1,593.5	3.5%	1,183.7	2.6%
43	50,745	591	1.2%	1,776.1	3.5%	1,217.9	2.4%
44	54,525	1,226	2.2%	1,908.4	3.5%	1,199.5	2.2%
45	58,368	1,339	2.3%	2,042.9	3.5%	1,167.4	2.0%
46	62,027	973	1.6%	2,171.0	3.5%	1,240.5	2.0%
47	66,504	869	1.3%	2,327.7	3.5%	1,330.1	2.0%
48	69,566	749	1.1%	2,087.0	3.0%	1,391.3	2.0%
49	73,403	1,294	1.8%	2,202.1	3.0%	1,468.1	2.0%
50	48,786	991	2.0%	1,463.6	3.0%	975.7	2.0%
51	51,670	862	1.7%	1,550.1	3.0%	1,033.4	2.0%
52	52,479	701	1.3%	1,574.4	3.0%	1,049.6	2.0%
53	52,064	1,067	2.0%	1,561.9	3.0%	1,041.3	2.0%
54	53,187	418	0.8%	1,595.6	3.0%	1,063.7	2.0%
	1,138,682	23,870	2.1%	39,538.9	3.5%	28,532.4	2.5%

APPENDIX G

PROBABILITY OF ELECTING A VESTED BENEFIT

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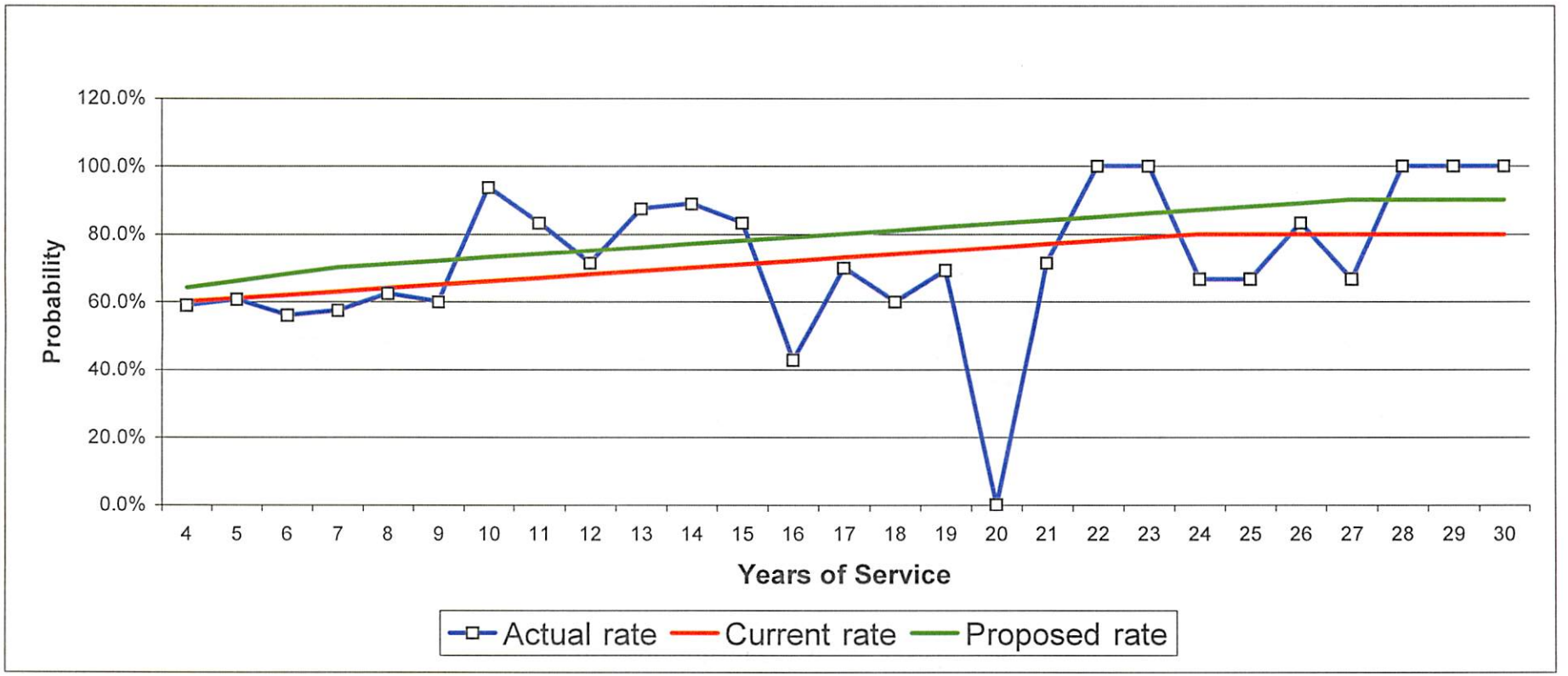
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-1

Probability of Electing a Vested Benefit

State Membership - Males



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	248	247	270
Actual/Expected		100%	92%

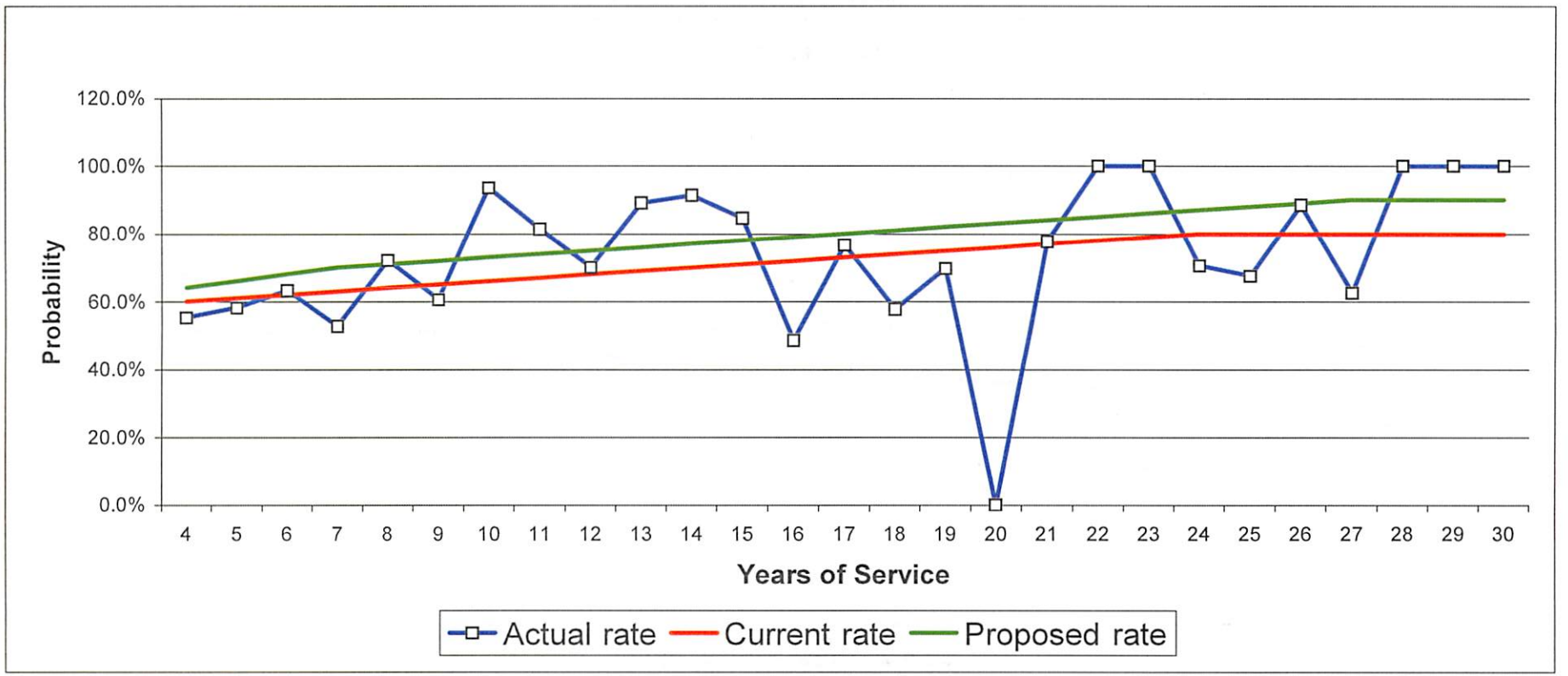
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-2

Probability of Electing a Vested Benefit

State Membership - Males (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	13,173	12,693	13,964
Actual/Expected		104%	94%

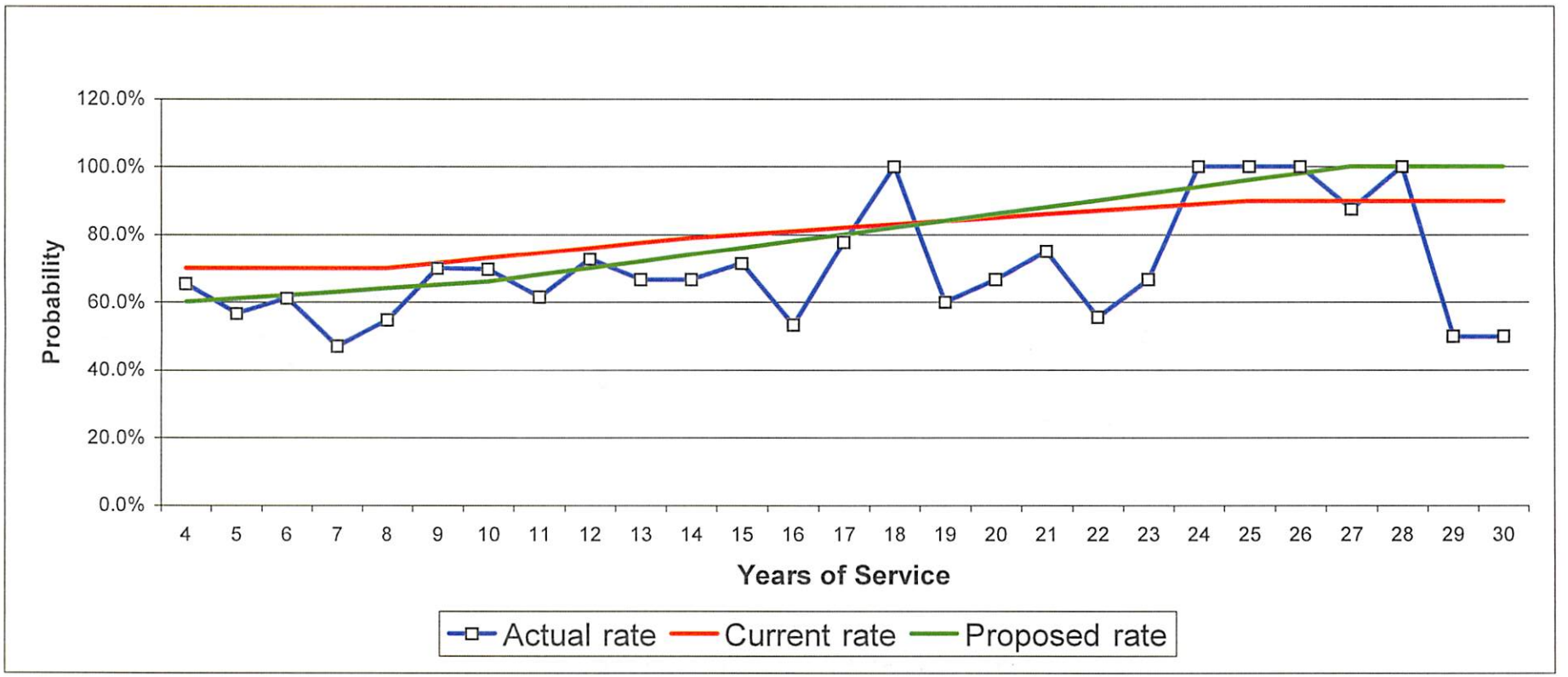
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-3

Probability of Electing a Vested Benefit

State Membership - Females



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	375	439	403
Actual/Expected		85%	93%

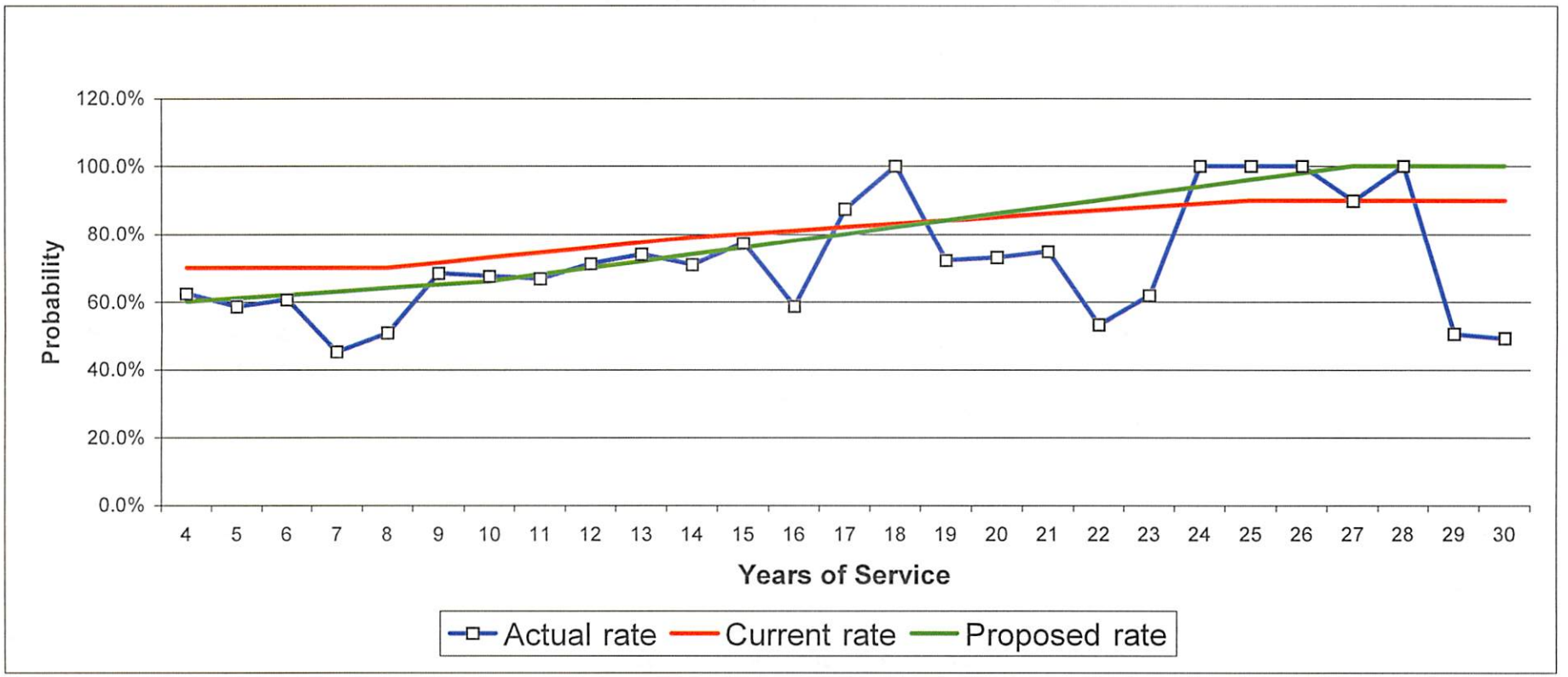
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-4

Probability of Electing a Vested Benefit

State Membership - Females (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	15,727	18,083	17,515
Actual/Expected		87%	90%

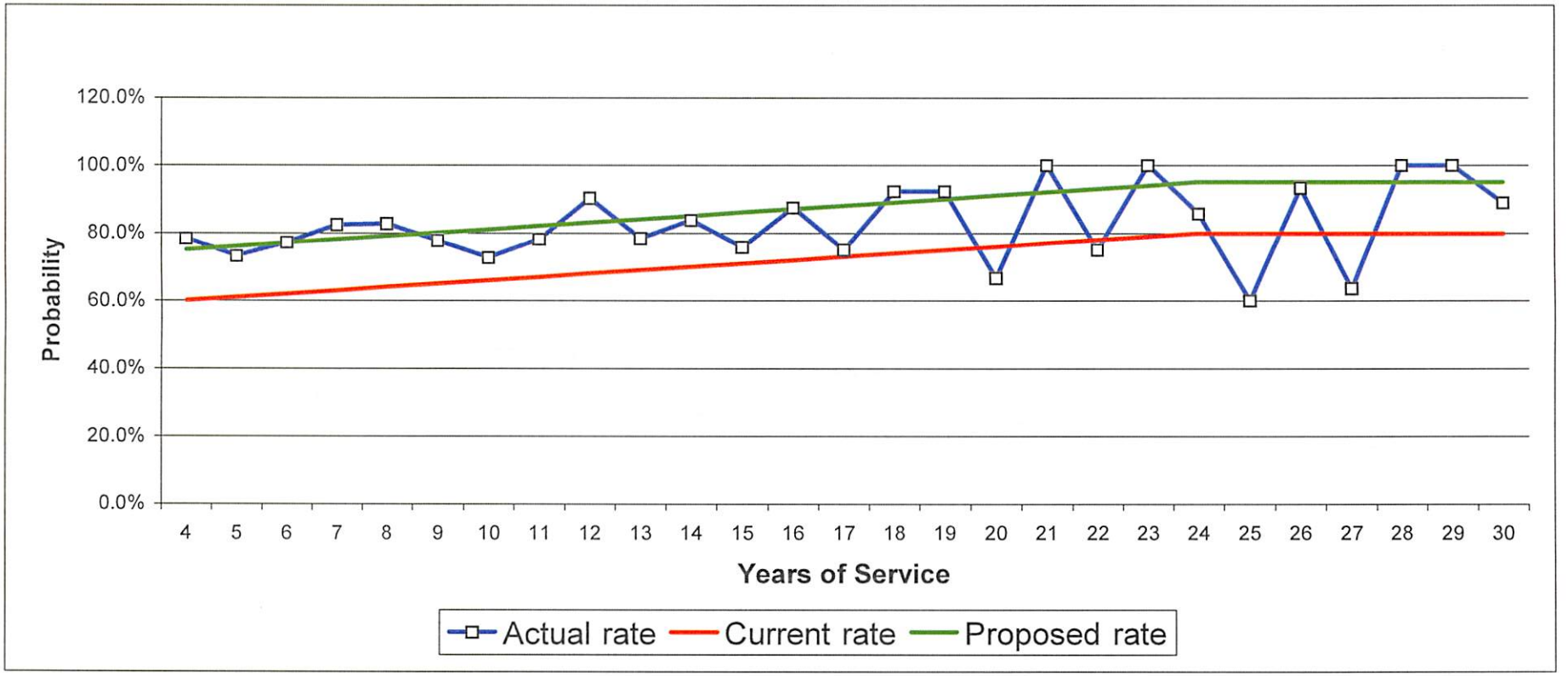
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-5

Probability of Electing a Vested Benefit

School Membership - Males



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,053	864	1,064
Actual/Expected		122%	99%

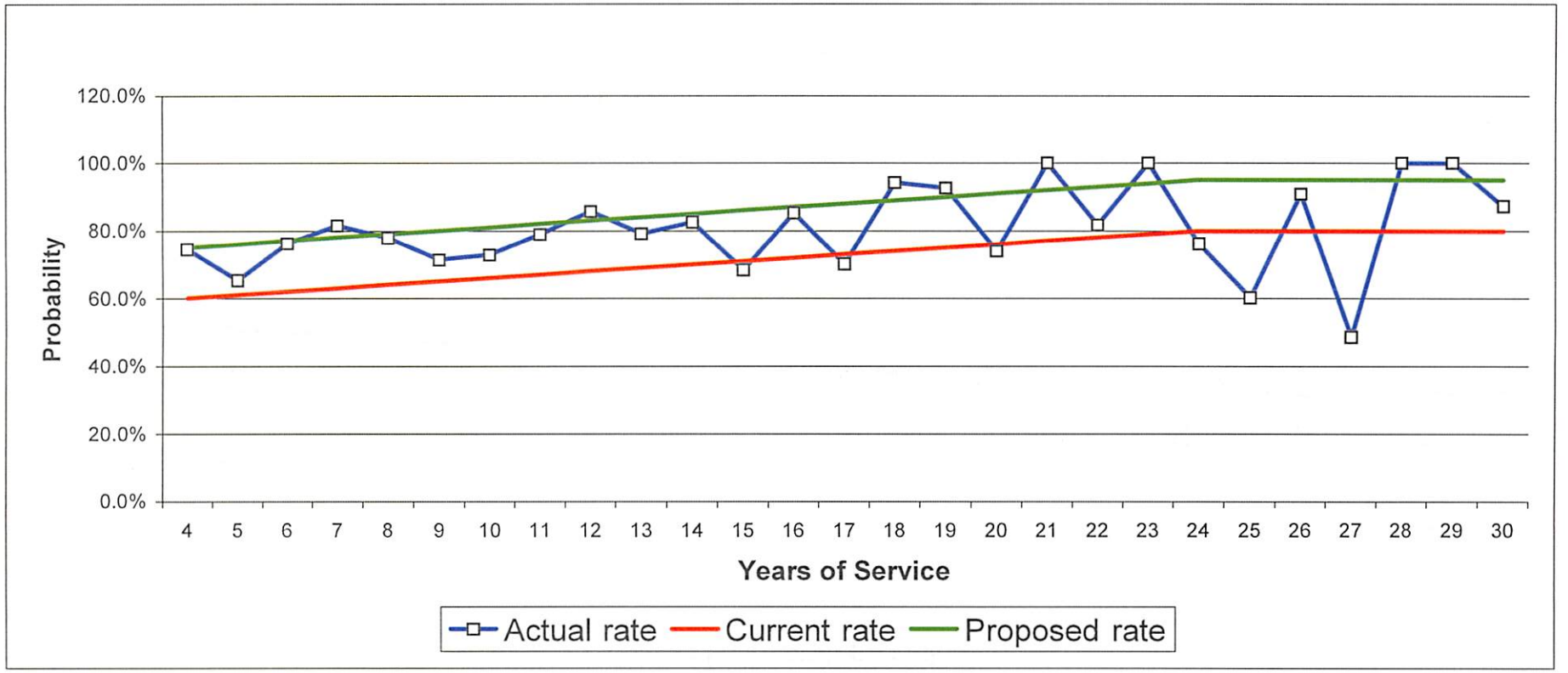
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-6

Probability of Electing a Vested Benefit

School Membership - Males (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	28,901	25,630	31,113
Actual/Expected		113%	93%

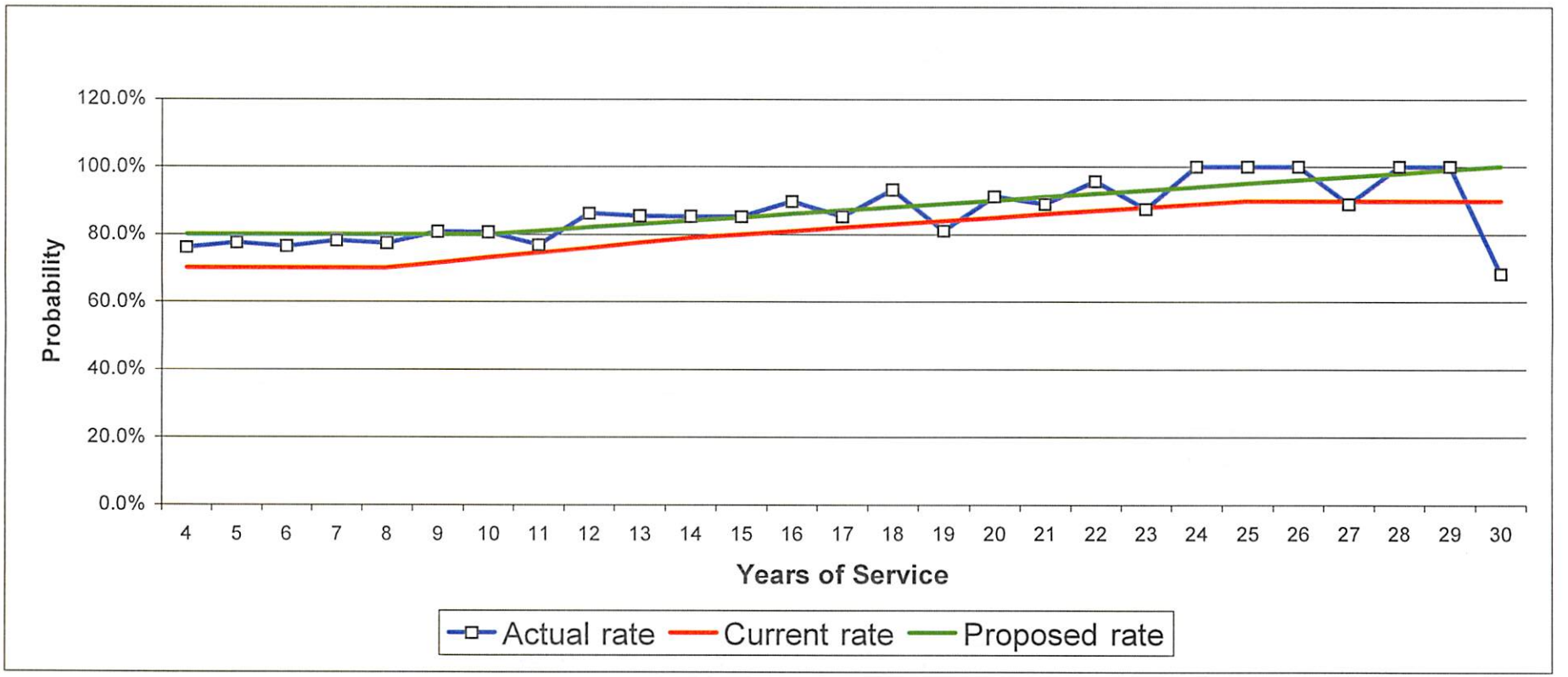
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-7

Probability of Electing a Vested Benefit

School Membership - Females



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	3,726	3,404	3,813
Actual/Expected		109%	98%

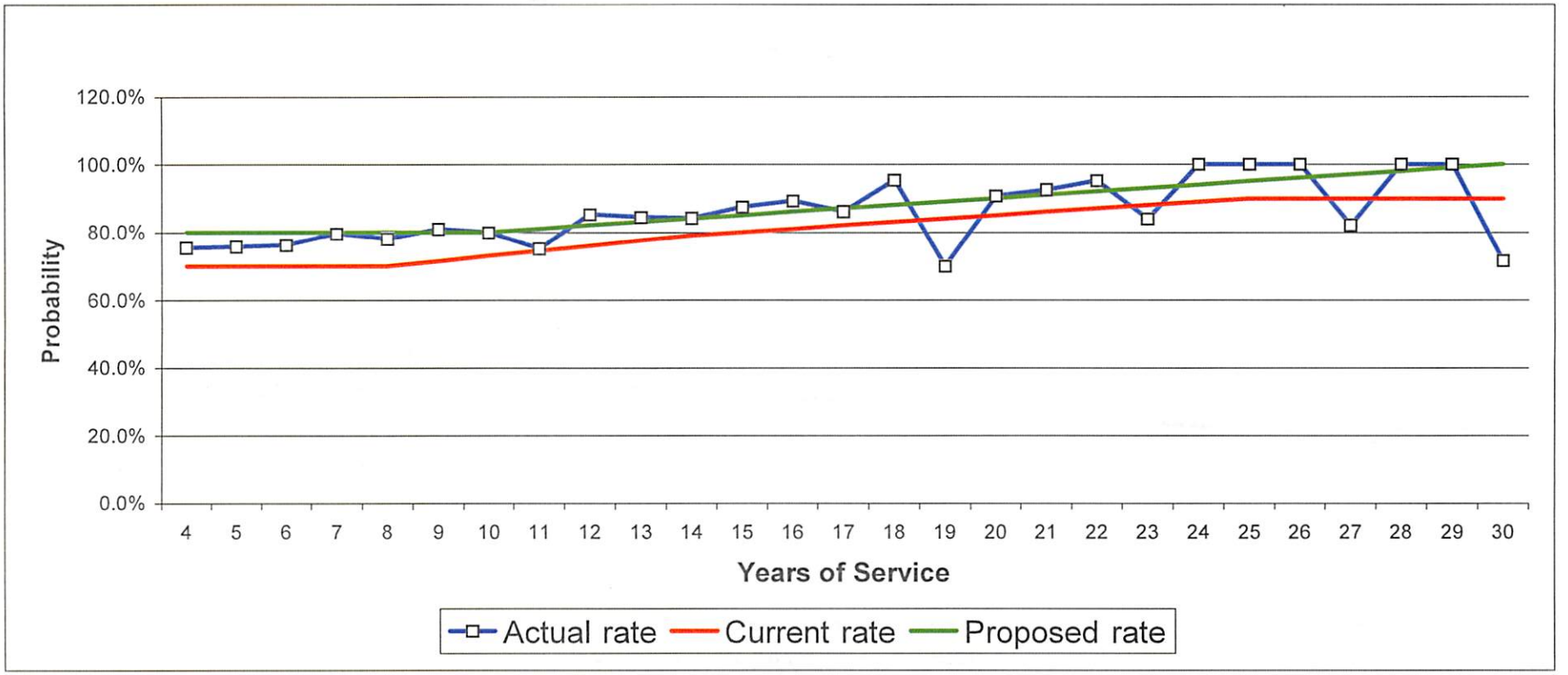
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-8

Probability of Electing a Vested Benefit

School Membership - Females (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	69,294	64,560	70,850
Actual/Expected		107%	98%

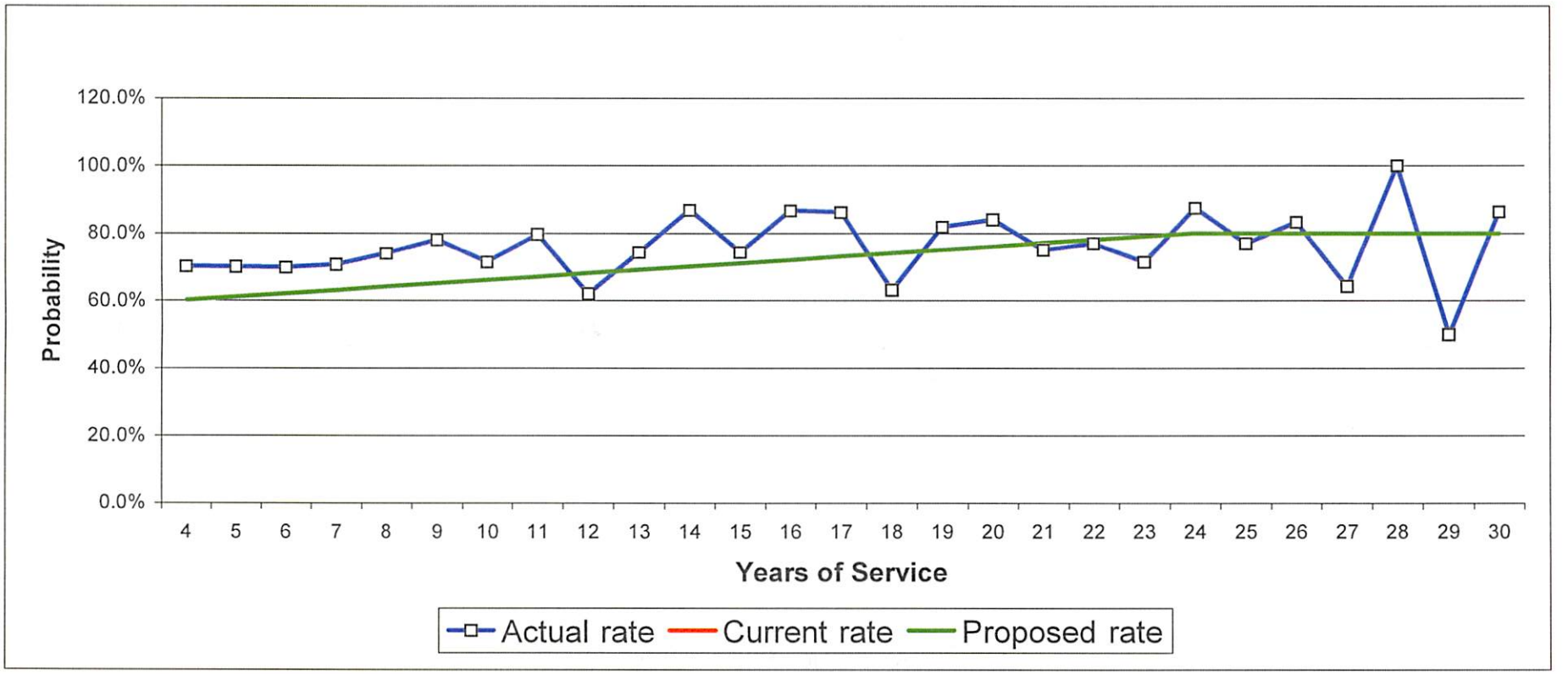
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-9

Probability of Electing a Vested Benefit

Other Membership - Males



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	1,224	1,093	1,093
Actual/Expected		112%	112%

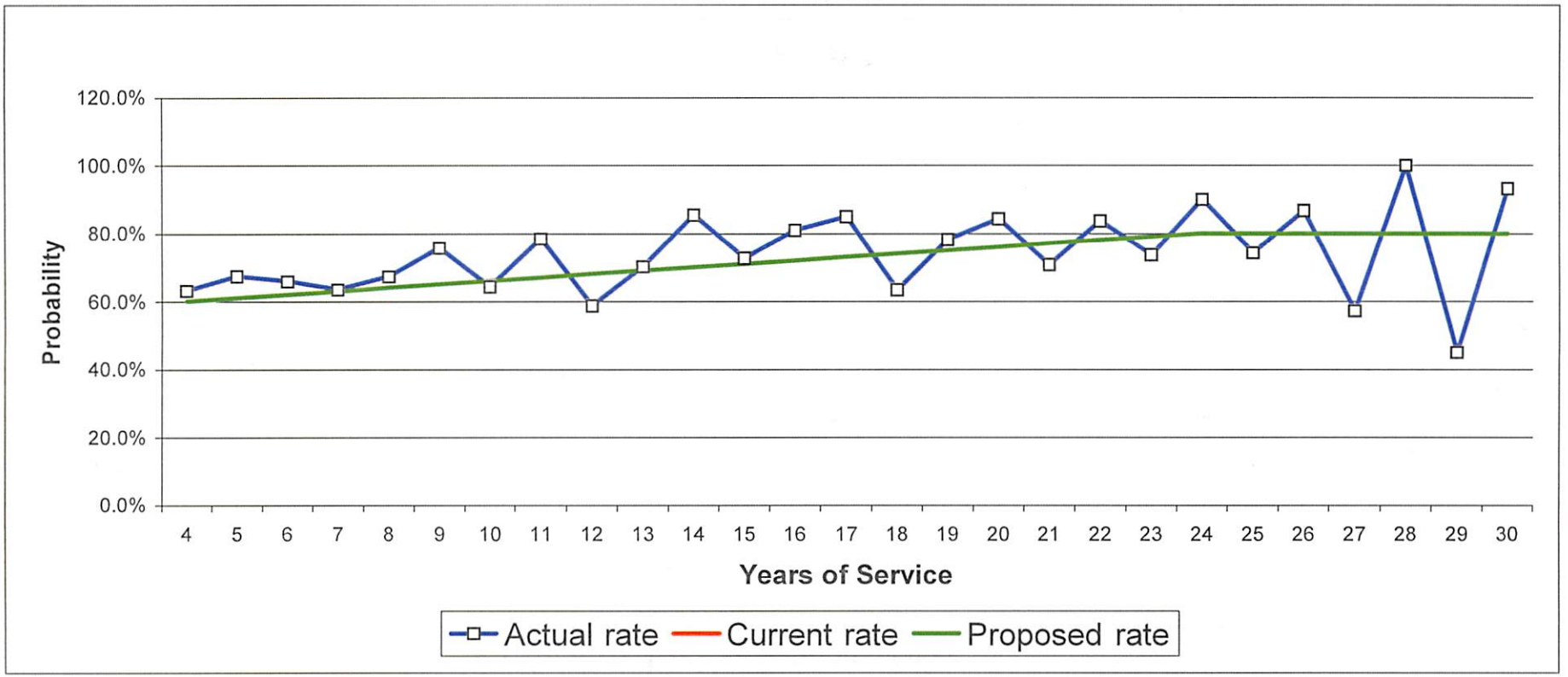
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-10

Probability of Electing a Vested Benefit

Other Membership - Males (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	37,468	35,701	35,701
Actual/Expected		105%	105%

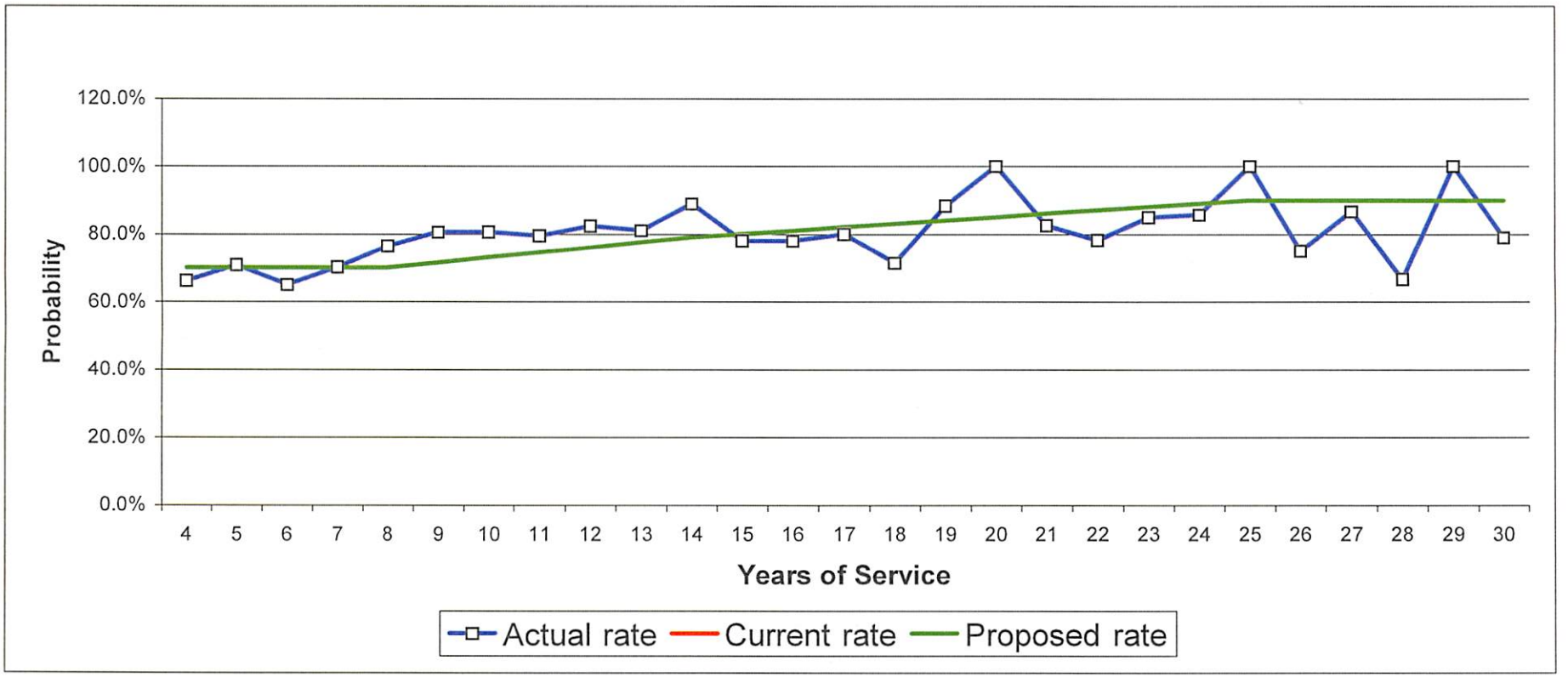
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-11

Probability of Electing a Vested Benefit

Other Membership - Females



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	2,448	2,428	2,428
Actual/Expected		101%	101%

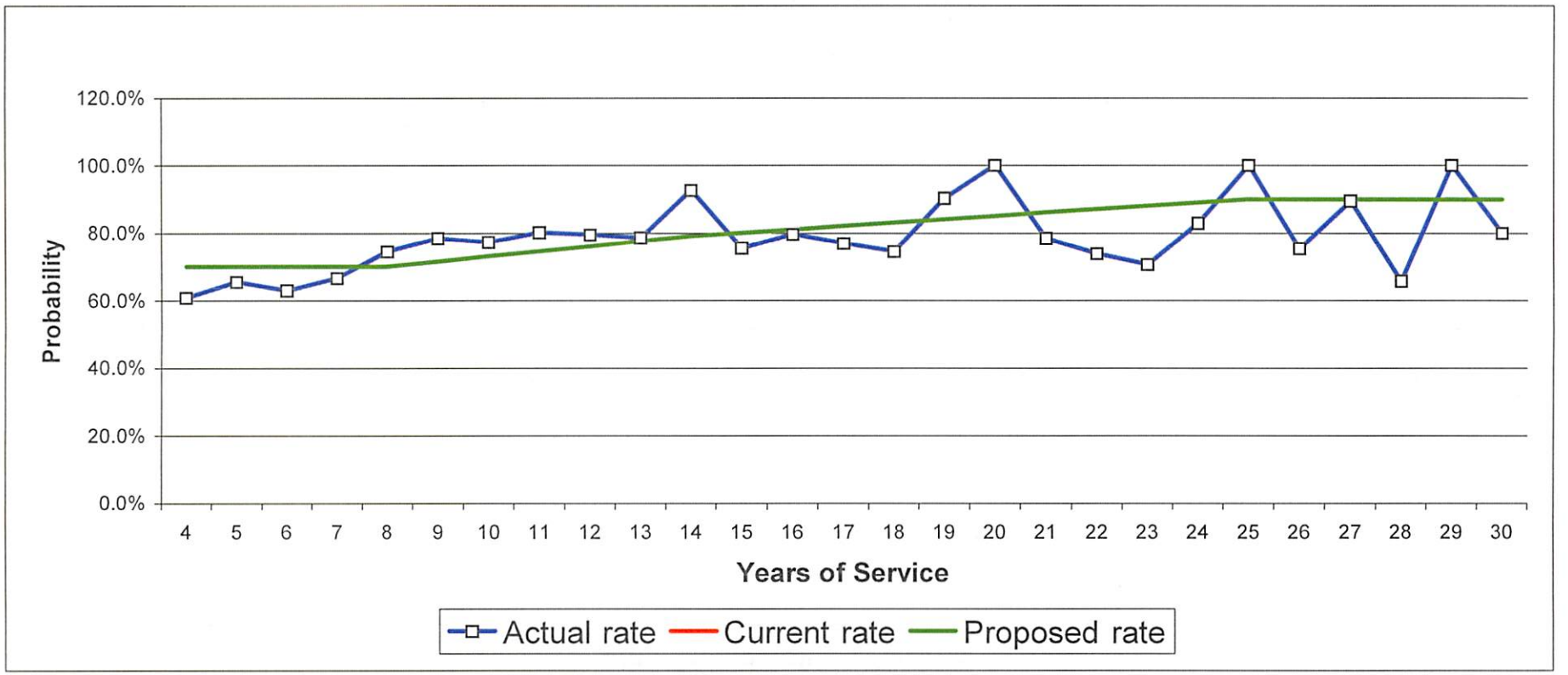
Iowa Public Employees' Retirement System

2005 - 2009 Experience Study

Exhibit G-12

Probability of Electing a Vested Benefit

Other Membership - Females (Weighted)



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	57,621	58,680	58,680
Actual/Expected		98%	98%

Data Summary G-1
Probability of Electing a Vested Benefit
State Membership - Males

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	56	33	58.9%	33.6	60.0%	35.8	64.0%
5	56	34	60.7%	34.2	61.0%	37.0	66.0%
6	41	23	56.1%	25.4	62.0%	27.9	68.0%
7	40	23	57.5%	25.2	63.0%	28.0	70.0%
8	24	15	62.5%	15.4	64.0%	17.0	71.0%
9	20	12	60.0%	13.0	65.0%	14.4	72.0%
10	16	15	93.8%	10.6	66.0%	11.7	73.0%
11	18	15	83.3%	12.1	67.0%	13.3	74.0%
12	7	5	71.4%	4.8	68.0%	5.3	75.0%
13	8	7	87.5%	5.5	69.0%	6.1	76.0%
14	9	8	88.9%	6.3	70.0%	6.9	77.0%
15	6	5	83.3%	4.3	71.0%	4.7	78.0%
16	7	3	42.9%	5.0	72.0%	5.5	79.0%
17	10	7	70.0%	7.3	73.0%	8.0	80.0%
18	5	3	60.0%	3.7	74.0%	4.1	81.0%
19	13	9	69.2%	9.8	75.0%	10.7	82.0%
20	1	-	0.0%	0.8	76.0%	0.8	83.0%
21	7	5	71.4%	5.4	77.0%	5.9	84.0%
22	1	1	100.0%	0.8	78.0%	0.9	85.0%
23	3	3	100.0%	2.4	79.0%	2.6	86.0%
24	6	4	66.7%	4.8	80.0%	5.2	87.0%
25	3	2	66.7%	2.4	80.0%	2.6	88.0%
26	6	5	83.3%	4.8	80.0%	5.3	89.0%
27	3	2	66.7%	2.4	80.0%	2.7	90.0%
28	4	4	100.0%	3.2	80.0%	3.6	90.0%
29	3	3	100.0%	2.4	80.0%	2.7	90.0%
30	2	2	100.0%	1.6	80.0%	1.8	90.0%
	375	248	66.1%	246.9	65.8%	270.4	72.1%

Data Summary G-2
Probability of Electing a Vested Benefit
State Membership - Males (Weighted)

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	782	432	55.3%	468.9	60.0%	500.2	64.0%
5	1,118	651	58.2%	681.8	61.0%	737.6	66.0%
6	1,185	750	63.3%	734.6	62.0%	805.6	68.0%
7	1,101	582	52.9%	693.4	63.0%	770.4	70.0%
8	1,025	740	72.2%	655.7	64.0%	727.5	71.0%
9	688	417	60.7%	447.1	65.0%	495.2	72.0%
10	829	776	93.6%	547.1	66.0%	605.1	73.0%
11	879	716	81.4%	589.0	67.0%	650.6	74.0%
12	367	257	70.2%	249.3	68.0%	275.0	75.0%
13	619	552	89.2%	427.2	69.0%	470.5	76.0%
14	678	620	91.4%	474.6	70.0%	522.0	77.0%
15	550	465	84.6%	390.3	71.0%	428.8	78.0%
16	601	293	48.7%	432.8	72.0%	474.9	79.0%
17	988	758	76.7%	721.5	73.0%	790.6	80.0%
18	485	281	57.8%	359.2	74.0%	393.2	81.0%
19	1,177	821	69.8%	882.8	75.0%	965.2	82.0%
20	99	-	0.0%	75.0	76.0%	81.9	83.0%
21	843	656	77.8%	649.3	77.0%	708.3	84.0%
22	177	177	100.0%	138.2	78.0%	150.6	85.0%
23	317	317	100.0%	250.6	79.0%	272.8	86.0%
24	817	577	70.6%	653.8	80.0%	711.0	87.0%
25	472	319	67.6%	377.5	80.0%	415.2	88.0%
26	594	526	88.5%	475.4	80.0%	528.9	89.0%
27	417	261	62.6%	333.8	80.0%	375.5	90.0%
28	534	534	100.0%	427.1	80.0%	480.5	90.0%
29	332	332	100.0%	265.7	80.0%	298.9	90.0%
30	364	364	100.0%	291.5	80.0%	327.9	90.0%
	18,038	13,173	73.0%	12,693.0	70.4%	13,964.1	77.4%

Data Summary G-3
Probability of Electing a Vested Benefit
State Membership - Females

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	104	68	65.4%	72.8	70.0%	62.4	60.0%
5	83	47	56.6%	58.1	70.0%	50.6	61.0%
6	72	44	61.1%	50.4	70.0%	44.6	62.0%
7	51	24	47.1%	35.7	70.0%	32.1	63.0%
8	42	23	54.8%	29.4	70.0%	26.9	64.0%
9	40	28	70.0%	28.6	71.5%	26.0	65.0%
10	33	23	69.7%	24.1	73.0%	21.8	66.0%
11	26	16	61.5%	19.4	74.5%	17.7	68.0%
12	11	8	72.7%	8.4	76.0%	7.7	70.0%
13	12	8	66.7%	9.3	77.5%	8.6	72.0%
14	12	8	66.7%	9.5	79.0%	8.9	74.0%
15	7	5	71.4%	5.6	80.0%	5.3	76.0%
16	15	8	53.3%	12.2	81.0%	11.7	78.0%
17	9	7	77.8%	7.4	82.0%	7.2	80.0%
18	7	7	100.0%	5.8	83.0%	5.7	82.0%
19	5	3	60.0%	4.2	84.0%	4.2	84.0%
20	15	10	66.7%	12.8	85.0%	12.9	86.0%
21	4	3	75.0%	3.4	86.0%	3.5	88.0%
22	9	5	55.6%	7.8	87.0%	8.1	90.0%
23	6	4	66.7%	5.3	88.0%	5.5	92.0%
24	4	4	100.0%	3.6	89.0%	3.8	94.0%
25	6	6	100.0%	5.4	90.0%	5.8	96.0%
26	4	4	100.0%	3.6	90.0%	3.9	98.0%
27	8	7	87.5%	7.2	90.0%	8.0	100.0%
28	-	-	100.0%	-	90.0%	-	100.0%
29	4	2	50.0%	3.6	90.0%	4.0	100.0%
30	6	3	50.0%	5.4	90.0%	6.0	100.0%
	595	375	63.0%	438.8	73.7%	403.0	67.7%

Data Summary G-4
Probability of Electing a Vested Benefit
State Membership - Females (Weighted)

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	1,355	846	62.4%	948.7	70.0%	813.1	60.0%
5	1,483	870	58.6%	1,038.1	70.0%	904.6	61.0%
6	1,505	912	60.6%	1,053.8	70.0%	933.4	62.0%
7	1,355	614	45.3%	948.7	70.0%	853.8	63.0%
8	1,179	601	51.0%	825.1	70.0%	754.4	64.0%
9	1,486	1,016	68.4%	1,062.3	71.5%	965.8	65.0%
10	1,257	849	67.6%	917.4	73.0%	829.4	66.0%
11	1,176	786	66.8%	876.1	74.5%	799.7	68.0%
12	517	368	71.2%	392.8	76.0%	361.8	70.0%
13	726	538	74.1%	562.3	77.5%	522.4	72.0%
14	742	527	71.0%	586.1	79.0%	549.0	74.0%
15	369	286	77.4%	295.5	80.0%	280.7	76.0%
16	1,007	591	58.7%	816.0	81.0%	785.7	78.0%
17	644	562	87.4%	527.9	82.0%	515.0	80.0%
18	611	611	100.0%	506.9	83.0%	500.8	82.0%
19	446	322	72.2%	374.6	84.0%	374.6	84.0%
20	1,248	911	73.1%	1,060.5	85.0%	1,073.0	86.0%
21	261	195	74.8%	224.5	86.0%	229.7	88.0%
22	906	483	53.3%	788.4	87.0%	815.6	90.0%
23	551	341	61.9%	484.5	88.0%	506.5	92.0%
24	536	536	100.0%	477.0	89.0%	503.8	94.0%
25	790	790	100.0%	711.0	90.0%	758.4	96.0%
26	516	516	100.0%	464.1	90.0%	505.4	98.0%
27	1,179	1,059	89.8%	1,061.2	90.0%	1,179.1	100.0%
28	-	-	100.0%	-	90.0%	-	100.0%
29	421	213	50.6%	378.5	90.0%	420.6	100.0%
30	778	384	49.3%	700.5	90.0%	778.3	100.0%
	23,043	15,727	68.2%	18,082.6	78.5%	17,514.8	76.0%

Data Summary G-5
Probability of Electing a Vested Benefit
School Membership - Males

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	258	202	78.3%	154.8	60.0%	193.5	75.0%
5	175	128	73.1%	106.8	61.0%	133.0	76.0%
6	171	132	77.2%	106.0	62.0%	131.7	77.0%
7	131	108	82.4%	82.5	63.0%	102.2	78.0%
8	87	72	82.8%	55.7	64.0%	68.7	79.0%
9	81	63	77.8%	52.6	65.0%	64.8	80.0%
10	66	48	72.7%	43.6	66.0%	53.5	81.0%
11	55	43	78.2%	36.9	67.0%	45.1	82.0%
12	41	37	90.2%	27.9	68.0%	34.0	83.0%
13	37	29	78.4%	25.5	69.0%	31.1	84.0%
14	37	31	83.8%	25.9	70.0%	31.5	85.0%
15	29	22	75.9%	20.6	71.0%	24.9	86.0%
16	16	14	87.5%	11.5	72.0%	13.9	87.0%
17	16	12	75.0%	11.7	73.0%	14.1	88.0%
18	13	12	92.3%	9.6	74.0%	11.6	89.0%
19	13	12	92.3%	9.8	75.0%	11.7	90.0%
20	9	6	66.7%	6.8	76.0%	8.2	91.0%
21	11	11	100.0%	8.5	77.0%	10.1	92.0%
22	8	6	75.0%	6.2	78.0%	7.4	93.0%
23	3	3	100.0%	2.4	79.0%	2.8	94.0%
24	7	6	85.7%	5.6	80.0%	6.7	95.0%
25	10	6	60.0%	8.0	80.0%	9.5	95.0%
26	15	14	93.3%	12.0	80.0%	14.3	95.0%
27	11	7	63.6%	8.8	80.0%	10.5	95.0%
28	8	8	100.0%	6.4	80.0%	7.6	95.0%
29	5	5	100.0%	4.0	80.0%	4.8	95.0%
30	18	16	88.9%	14.4	80.0%	17.1	95.0%
	1,331	1,053	79.1%	864.4	64.9%	1,064.1	79.9%

Data Summary G-6
Probability of Electing a Vested Benefit
School Membership - Males (Weighted)

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	1,978	1,474	74.5%	1,187.0	60.0%	1,483.7	75.0%
5	1,985	1,298	65.4%	1,210.7	61.0%	1,508.4	76.0%
6	2,544	1,939	76.2%	1,577.4	62.0%	1,959.0	77.0%
7	2,139	1,744	81.6%	1,347.4	63.0%	1,668.2	78.0%
8	1,965	1,531	77.9%	1,257.5	64.0%	1,552.2	79.0%
9	1,971	1,408	71.4%	1,281.4	65.0%	1,577.1	80.0%
10	1,790	1,304	72.8%	1,181.6	66.0%	1,450.2	81.0%
11	1,524	1,203	78.9%	1,021.4	67.0%	1,250.1	82.0%
12	1,248	1,069	85.7%	848.7	68.0%	1,036.0	83.0%
13	1,316	1,041	79.1%	907.7	69.0%	1,105.1	84.0%
14	1,843	1,521	82.5%	1,289.8	70.0%	1,566.2	85.0%
15	1,631	1,116	68.4%	1,158.3	71.0%	1,403.1	86.0%
16	998	851	85.3%	718.3	72.0%	868.0	87.0%
17	912	640	70.2%	665.5	73.0%	802.3	88.0%
18	1,021	962	94.2%	755.9	74.0%	909.1	89.0%
19	1,007	932	92.6%	754.9	75.0%	905.9	90.0%
20	953	704	73.9%	724.1	76.0%	867.0	91.0%
21	789	789	100.0%	607.6	77.0%	725.9	92.0%
22	954	780	81.7%	744.4	78.0%	887.6	93.0%
23	229	229	100.0%	181.3	79.0%	215.7	94.0%
24	744	567	76.2%	595.1	80.0%	706.6	95.0%
25	795	479	60.2%	636.3	80.0%	755.6	95.0%
26	1,441	1,309	90.8%	1,152.9	80.0%	1,369.1	95.0%
27	828	403	48.7%	662.6	80.0%	786.8	95.0%
28	570	570	100.0%	456.4	80.0%	541.9	95.0%
29	678	678	100.0%	542.2	80.0%	643.8	95.0%
30	2,704	2,359	87.2%	2,163.3	80.0%	2,568.9	95.0%
	36,559	28,901	79.1%	25,629.7	70.1%	31,113.4	85.1%

Data Summary G-7
Probability of Electing a Vested Benefit
School Membership - Females

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	873	664	76.1%	611.1	70.0%	698.4	80.0%
5	711	551	77.5%	497.7	70.0%	568.8	80.0%
6	587	449	76.5%	410.9	70.0%	469.6	80.0%
7	508	397	78.1%	355.6	70.0%	406.4	80.0%
8	355	275	77.5%	248.5	70.0%	284.0	80.0%
9	313	253	80.8%	223.8	71.5%	250.4	80.0%
10	264	213	80.7%	192.7	73.0%	211.2	80.0%
11	173	133	76.9%	128.9	74.5%	140.1	81.0%
12	159	137	86.2%	120.8	76.0%	130.4	82.0%
13	131	112	85.5%	101.5	77.5%	108.7	83.0%
14	129	110	85.3%	101.9	79.0%	108.4	84.0%
15	81	69	85.2%	64.8	80.0%	68.9	85.0%
16	68	61	89.7%	55.1	81.0%	58.5	86.0%
17	54	46	85.2%	44.3	82.0%	47.0	87.0%
18	44	41	93.2%	36.5	83.0%	38.7	88.0%
19	37	30	81.1%	31.1	84.0%	32.9	89.0%
20	34	31	91.2%	28.9	85.0%	30.6	90.0%
21	27	24	88.9%	23.2	86.0%	24.6	91.0%
22	23	22	95.7%	20.0	87.0%	21.2	92.0%
23	24	21	87.5%	21.1	88.0%	22.3	93.0%
24	16	16	100.0%	14.2	89.0%	15.0	94.0%
25	20	20	100.0%	18.0	90.0%	19.0	95.0%
26	11	11	100.0%	9.9	90.0%	10.6	96.0%
27	9	8	88.9%	8.1	90.0%	8.7	97.0%
28	12	12	100.0%	10.8	90.0%	11.8	98.0%
29	5	5	100.0%	4.5	90.0%	5.0	99.0%
30	22	15	68.2%	19.8	90.0%	22.0	100.0%
	4,690	3,726	79.4%	3,403.8	72.6%	3,813.1	81.3%

Data Summary G-8
Probability of Electing a Vested Benefit
School Membership - Females (Weighted)

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	5,404	4,080	75.5%	3,782.6	70.0%	4,323.0	80.0%
5	6,067	4,599	75.8%	4,247.2	70.0%	4,853.9	80.0%
6	5,784	4,409	76.2%	4,049.0	70.0%	4,627.5	80.0%
7	6,453	5,138	79.6%	4,517.4	70.0%	5,162.8	80.0%
8	5,408	4,224	78.1%	3,785.4	70.0%	4,326.1	80.0%
9	5,540	4,486	81.0%	3,961.3	71.5%	4,432.2	80.0%
10	5,399	4,314	79.9%	3,941.1	73.0%	4,319.0	80.0%
11	3,649	2,745	75.2%	2,718.6	74.5%	2,955.8	81.0%
12	3,841	3,275	85.3%	2,919.4	76.0%	3,149.8	82.0%
13	4,008	3,385	84.5%	3,106.4	77.5%	3,326.8	83.0%
14	3,945	3,320	84.2%	3,116.9	79.0%	3,314.2	84.0%
15	3,104	2,716	87.5%	2,483.2	80.0%	2,638.4	85.0%
16	2,368	2,114	89.3%	1,918.1	81.0%	2,036.5	86.0%
17	2,219	1,911	86.1%	1,819.9	82.0%	1,930.8	87.0%
18	2,265	2,160	95.4%	1,879.9	83.0%	1,993.1	88.0%
19	1,809	1,265	69.9%	1,519.9	84.0%	1,610.4	89.0%
20	2,078	1,883	90.7%	1,766.0	85.0%	1,869.9	90.0%
21	1,578	1,460	92.5%	1,357.2	86.0%	1,436.1	91.0%
22	1,916	1,824	95.2%	1,667.1	87.0%	1,762.9	92.0%
23	1,790	1,503	84.0%	1,575.5	88.0%	1,665.0	93.0%
24	1,241	1,241	100.0%	1,104.8	89.0%	1,166.9	94.0%
25	1,612	1,612	100.0%	1,450.8	90.0%	1,531.5	95.0%
26	1,314	1,314	100.0%	1,182.6	90.0%	1,261.5	96.0%
27	822	675	82.1%	739.6	90.0%	797.1	97.0%
28	1,252	1,252	100.0%	1,126.9	90.0%	1,227.1	98.0%
29	498	498	100.0%	447.8	90.0%	492.6	99.0%
30	2,639	1,889	71.6%	2,375.3	90.0%	2,639.3	100.0%
	84,006	69,294	82.5%	64,560.0	76.9%	70,850.2	84.3%

Data Summary G-9
Probability of Electing a Vested Benefit
Other Membership - Males

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	298	209	70.1%	178.8	60.0%	178.8	60.0%
5	254	178	70.1%	154.9	61.0%	154.9	61.0%
6	212	148	69.8%	131.4	62.0%	131.4	62.0%
7	167	118	70.7%	105.2	63.0%	105.2	63.0%
8	119	88	73.9%	76.2	64.0%	76.2	64.0%
9	82	64	78.0%	53.3	65.0%	53.3	65.0%
10	77	55	71.4%	50.8	66.0%	50.8	66.0%
11	59	47	79.7%	39.5	67.0%	39.5	67.0%
12	50	31	62.0%	34.0	68.0%	34.0	68.0%
13	35	26	74.3%	24.1	69.0%	24.1	69.0%
14	38	33	86.8%	26.6	70.0%	26.6	70.0%
15	35	26	74.3%	24.8	71.0%	24.8	71.0%
16	30	26	86.7%	21.6	72.0%	21.6	72.0%
17	29	25	86.2%	21.2	73.0%	21.2	73.0%
18	19	12	63.2%	14.1	74.0%	14.1	74.0%
19	22	18	81.8%	16.5	75.0%	16.5	75.0%
20	25	21	84.0%	19.0	76.0%	19.0	76.0%
21	16	12	75.0%	12.3	77.0%	12.3	77.0%
22	13	10	76.9%	10.1	78.0%	10.1	78.0%
23	14	10	71.4%	11.1	79.0%	11.1	79.0%
24	8	7	87.5%	6.4	80.0%	6.4	80.0%
25	13	10	76.9%	10.4	80.0%	10.4	80.0%
26	12	10	83.3%	9.6	80.0%	9.6	80.0%
27	14	9	64.3%	11.2	80.0%	11.2	80.0%
28	9	9	100.0%	7.2	80.0%	7.2	80.0%
29	6	3	50.0%	4.8	80.0%	4.8	80.0%
30	22	19	86.4%	17.6	80.0%	17.6	80.0%
	1,678	1,224	72.9%	1,092.9	65.1%	1,092.9	65.1%

Data Summary G-10
Probability of Electing a Vested Benefit
Other Membership - Males (Weighted)

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	2,798	1,769	63.3%	1,678.5	60.0%	1,678.5	60.0%
5	3,597	2,427	67.5%	2,194.0	61.0%	2,194.0	61.0%
6	3,517	2,318	65.9%	2,180.4	62.0%	2,180.4	62.0%
7	3,119	1,981	63.5%	1,965.1	63.0%	1,965.1	63.0%
8	2,573	1,734	67.4%	1,646.9	64.0%	1,646.9	64.0%
9	2,468	1,869	75.7%	1,604.0	65.0%	1,604.0	65.0%
10	2,159	1,391	64.4%	1,425.3	66.0%	1,425.3	66.0%
11	2,110	1,656	78.5%	1,413.5	67.0%	1,413.5	67.0%
12	2,085	1,227	58.8%	1,418.0	68.0%	1,418.0	68.0%
13	1,616	1,137	70.3%	1,115.3	69.0%	1,115.3	69.0%
14	1,681	1,436	85.4%	1,176.8	70.0%	1,176.8	70.0%
15	1,812	1,319	72.8%	1,286.5	71.0%	1,286.5	71.0%
16	1,399	1,132	80.9%	1,007.1	72.0%	1,007.1	72.0%
17	2,175	1,848	85.0%	1,587.5	73.0%	1,587.5	73.0%
18	1,174	745	63.4%	868.6	74.0%	868.6	74.0%
19	1,496	1,170	78.2%	1,121.9	75.0%	1,121.9	75.0%
20	2,076	1,751	84.3%	1,577.8	76.0%	1,577.8	76.0%
21	1,045	740	70.8%	804.4	77.0%	804.4	77.0%
22	1,205	1,009	83.7%	939.6	78.0%	939.6	78.0%
23	1,222	901	73.7%	965.4	79.0%	965.4	79.0%
24	756	681	90.0%	605.0	80.0%	605.0	80.0%
25	1,199	891	74.3%	959.4	80.0%	959.4	80.0%
26	1,312	1,138	86.7%	1,049.4	80.0%	1,049.4	80.0%
27	1,341	767	57.2%	1,072.5	80.0%	1,072.5	80.0%
28	1,063	1,063	100.0%	850.4	80.0%	850.4	80.0%
29	715	322	45.1%	572.1	80.0%	572.1	80.0%
30	3,269	3,047	93.2%	2,615.2	80.0%	2,615.2	80.0%
	50,981	37,468	73.5%	35,700.7	70.0%	35,700.7	70.0%

Data Summary G-11
Probability of Electing a Vested Benefit
Other Membership - Females

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	621	411	66.2%	434.7	70.0%	434.7	70.0%
5	497	352	70.8%	347.9	70.0%	347.9	70.0%
6	383	249	65.0%	268.1	70.0%	268.1	70.0%
7	356	250	70.2%	249.2	70.0%	249.2	70.0%
8	276	211	76.4%	193.2	70.0%	193.2	70.0%
9	190	153	80.5%	135.8	71.5%	135.8	71.5%
10	160	129	80.6%	116.8	73.0%	116.8	73.0%
11	117	93	79.5%	87.2	74.5%	87.2	74.5%
12	108	89	82.4%	82.1	76.0%	82.1	76.0%
13	111	90	81.1%	86.0	77.5%	86.0	77.5%
14	63	56	88.9%	49.8	79.0%	49.8	79.0%
15	73	57	78.1%	58.4	80.0%	58.4	80.0%
16	50	39	78.0%	40.5	81.0%	40.5	81.0%
17	65	52	80.0%	53.3	82.0%	53.3	82.0%
18	35	25	71.4%	29.0	83.0%	29.0	83.0%
19	43	38	88.4%	36.1	84.0%	36.1	84.0%
20	24	24	100.0%	20.4	85.0%	20.4	85.0%
21	23	19	82.6%	19.8	86.0%	19.8	86.0%
22	23	18	78.3%	20.0	87.0%	20.0	87.0%
23	20	17	85.0%	17.6	88.0%	17.6	88.0%
24	14	12	85.7%	12.5	89.0%	12.5	89.0%
25	8	8	100.0%	7.2	90.0%	7.2	90.0%
26	16	12	75.0%	14.4	90.0%	14.4	90.0%
27	15	13	86.7%	13.5	90.0%	13.5	90.0%
28	9	6	66.7%	8.1	90.0%	8.1	90.0%
29	10	10	100.0%	9.0	90.0%	9.0	90.0%
30	19	15	78.9%	17.1	90.0%	17.1	90.0%
	3,329	2,448	73.5%	2,427.7	72.9%	2,427.7	72.9%

Data Summary G-12
Probability of Electing a Vested Benefit
Other Membership - Females (Weighted)

Duration	Exposure	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
4	4,999	3,040	60.8%	3,499.6	70.0%	3,499.6	70.0%
5	5,044	3,301	65.4%	3,530.5	70.0%	3,530.5	70.0%
6	5,118	3,222	62.9%	3,582.9	70.0%	3,582.9	70.0%
7	5,649	3,762	66.6%	3,954.1	70.0%	3,954.1	70.0%
8	4,933	3,672	74.5%	3,452.9	70.0%	3,452.9	70.0%
9	4,313	3,380	78.4%	3,083.5	71.5%	3,083.5	71.5%
10	3,744	2,894	77.3%	2,733.2	73.0%	2,733.2	73.0%
11	3,099	2,485	80.2%	2,308.5	74.5%	2,308.5	74.5%
12	3,482	2,766	79.4%	2,646.1	76.0%	2,646.1	76.0%
13	3,954	3,105	78.5%	3,064.0	77.5%	3,064.0	77.5%
14	2,159	2,000	92.6%	1,705.6	79.0%	1,705.6	79.0%
15	3,050	2,303	75.5%	2,439.8	80.0%	2,439.8	80.0%
16	2,496	1,987	79.6%	2,022.2	81.0%	2,022.2	81.0%
17	3,843	2,955	76.9%	3,151.6	82.0%	3,151.6	82.0%
18	1,932	1,438	74.4%	1,603.1	83.0%	1,603.1	83.0%
19	2,863	2,585	90.3%	2,405.2	84.0%	2,405.2	84.0%
20	2,268	2,268	100.0%	1,927.5	85.0%	1,927.5	85.0%
21	1,337	1,048	78.4%	1,149.8	86.0%	1,149.8	86.0%
22	1,597	1,180	73.8%	1,389.8	87.0%	1,389.8	87.0%
23	1,297	916	70.6%	1,141.6	88.0%	1,141.6	88.0%
24	1,388	1,151	82.9%	1,235.7	89.0%	1,235.7	89.0%
25	520	520	100.0%	467.9	90.0%	467.9	90.0%
26	1,471	1,108	75.3%	1,323.5	90.0%	1,323.5	90.0%
27	1,211	1,084	89.5%	1,089.9	90.0%	1,089.9	90.0%
28	980	644	65.7%	881.6	90.0%	881.6	90.0%
29	1,207	1,207	100.0%	1,086.1	90.0%	1,086.1	90.0%
30	2,004	1,602	79.9%	1,803.6	90.0%	1,803.6	90.0%
	75,956	57,621	75.9%	58,679.7	77.3%	58,679.7	77.3%

APPENDIX H

SALARY INCREASES

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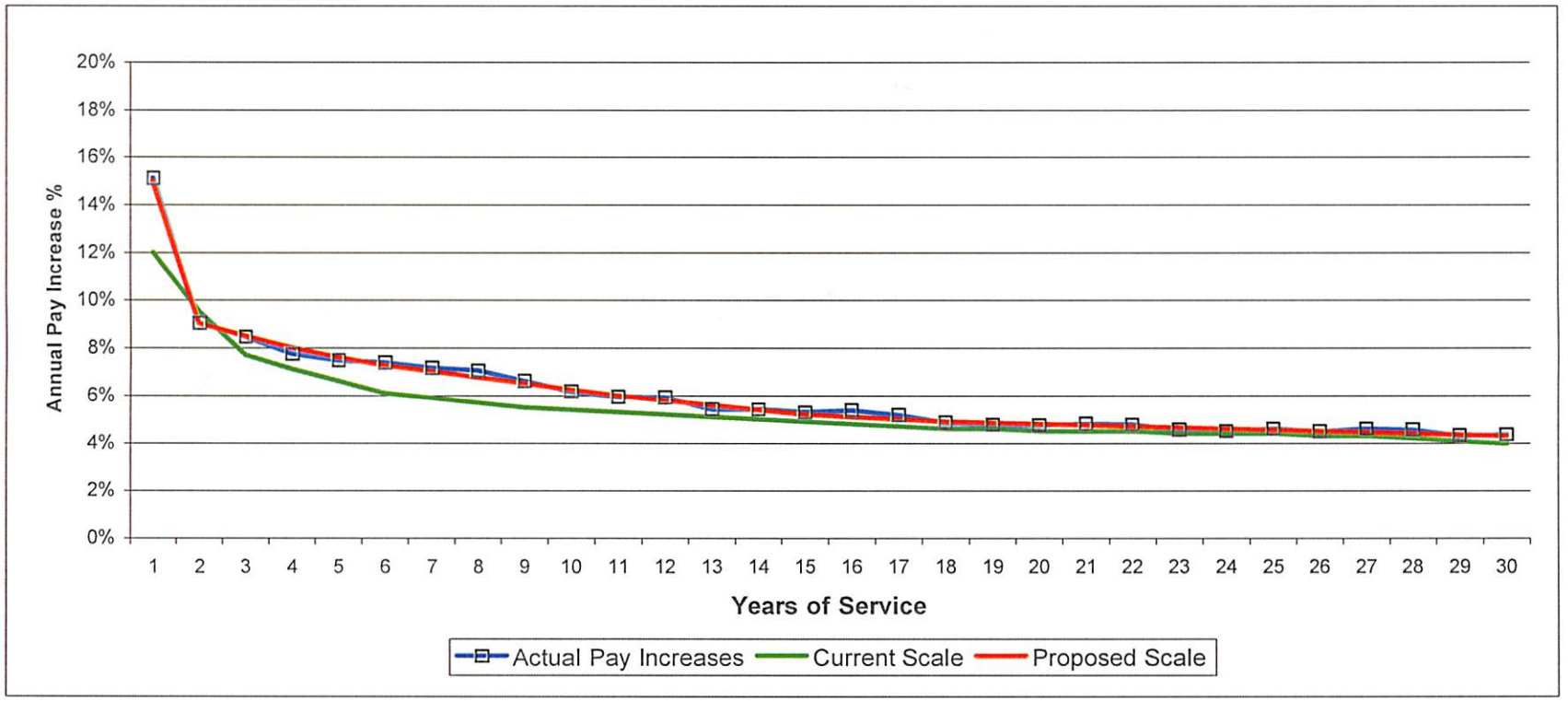
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit H-1

Salary Increases

State Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Salary Increases	6.09%	5.47%	6.05%

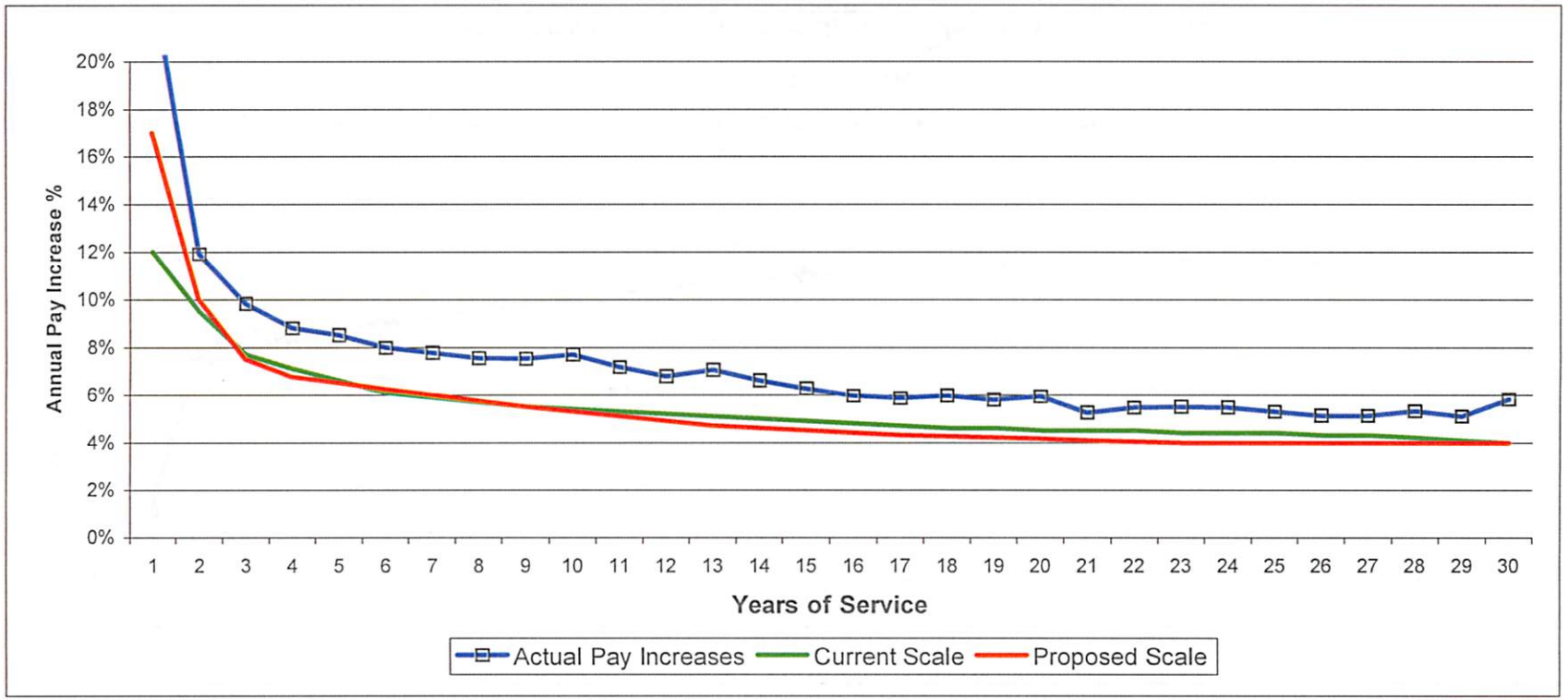
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit H-2

Salary Increases

School Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Salary Increases	7.59%	5.60%	5.63%

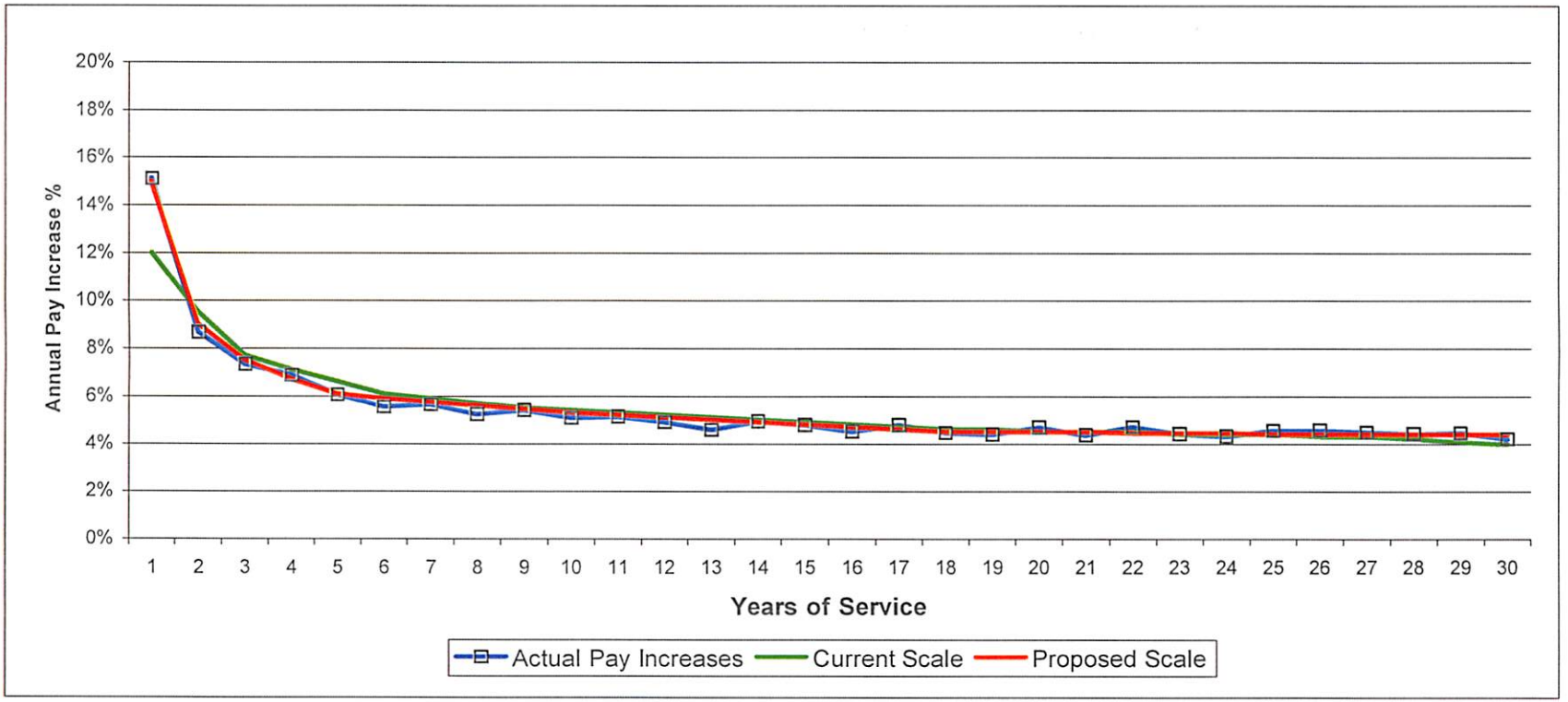
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit H-3

Salary Increases

Other Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Salary Increases	5.90%	5.91%	5.99%

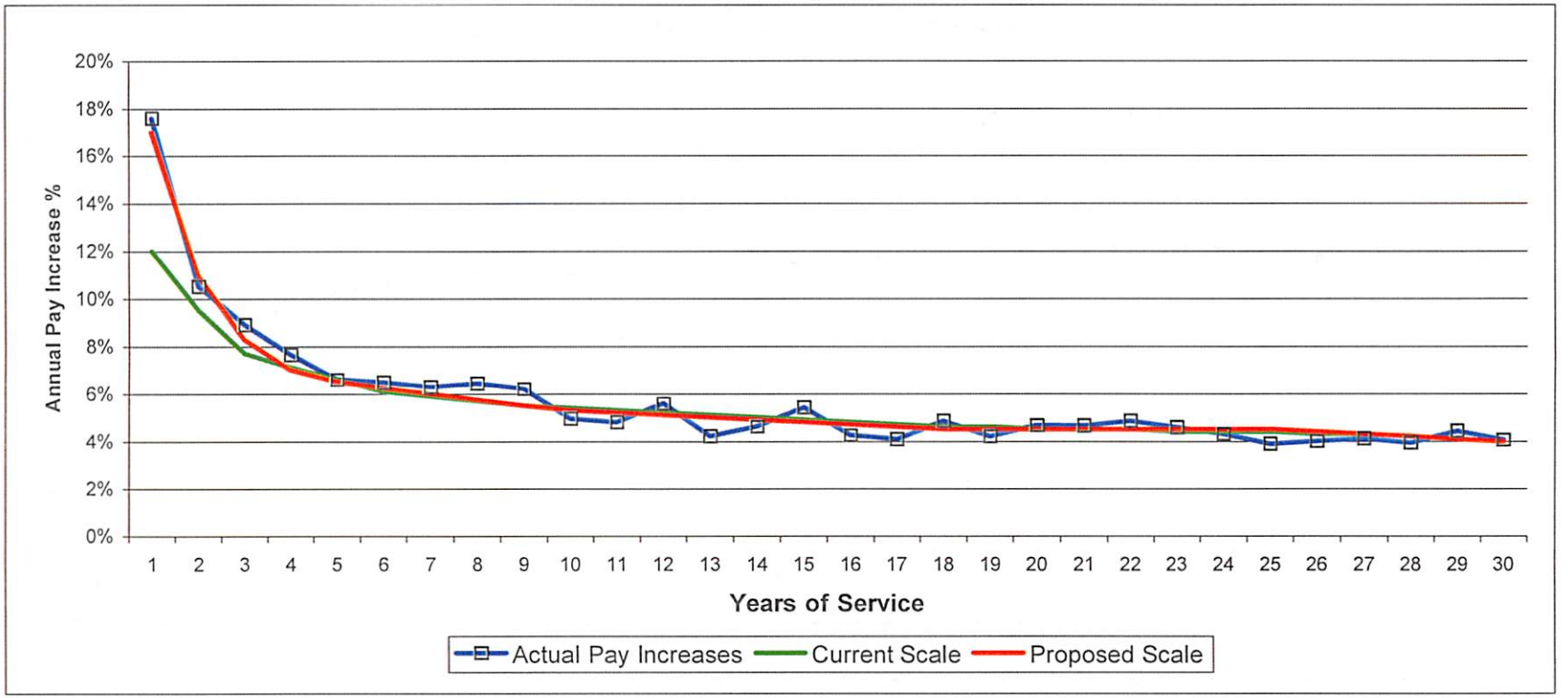
Iowa Public Employees' Retirement System

2005-2009 Experience Study

Exhibit H-4

Salary Increases

Special Services Membership



	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Salary Increases	6.24%	5.83%	6.13%

Data Summary H-1
Salary Increases
State Membership

Duration	Initial Salary (Millions)	Subsequent Salary (Millions)	Actual Rate	Current Expected (Millions)	Current Rate	Proposed Expected (Millions)	Proposed Rate
1	136.7	157.4	15.1%	153.1	12.0%	157.2	15.0%
2	132.6	144.6	9.0%	145.2	9.5%	144.6	9.0%
3	114.3	124.0	8.5%	123.1	7.7%	124.0	8.5%
4	107.9	116.2	7.7%	115.5	7.1%	116.5	8.0%
5	119.7	128.7	7.5%	127.6	6.6%	128.8	7.6%
6	126.8	136.1	7.4%	134.5	6.1%	135.9	7.3%
7	145.0	155.4	7.2%	153.6	5.9%	155.2	7.0%
8	146.2	156.5	7.0%	154.6	5.7%	156.1	6.8%
9	134.7	143.7	6.6%	142.2	5.5%	143.5	6.5%
10	123.8	131.4	6.2%	130.4	5.4%	131.5	6.3%
11	111.6	118.3	5.9%	117.6	5.3%	118.3	6.0%
12	100.6	106.5	5.9%	105.8	5.2%	106.4	5.8%
13	88.9	93.7	5.4%	93.4	5.1%	93.9	5.6%
14	79.7	84.0	5.4%	83.7	5.0%	84.0	5.4%
15	81.6	86.0	5.3%	85.6	4.9%	85.9	5.2%
16	91.6	96.5	5.4%	96.0	4.8%	96.3	5.1%
17	107.8	113.4	5.2%	112.8	4.7%	113.2	5.0%
18	118.7	124.5	4.9%	124.2	4.6%	124.5	4.9%
19	115.3	120.8	4.8%	120.6	4.6%	120.9	4.9%
20	113.8	119.3	4.8%	119.0	4.5%	119.3	4.8%
21	113.6	119.0	4.8%	118.7	4.5%	118.9	4.8%
22	106.4	111.5	4.8%	111.2	4.5%	111.4	4.7%
23	108.3	113.3	4.6%	113.1	4.4%	113.4	4.7%
24	97.6	102.0	4.5%	101.9	4.4%	102.1	4.6%
25	89.7	93.8	4.6%	93.6	4.4%	93.8	4.6%
26	92.3	96.4	4.5%	96.2	4.3%	96.4	4.5%
27	92.6	96.8	4.6%	96.5	4.3%	96.7	4.5%
28	93.6	97.9	4.6%	97.6	4.2%	97.8	4.4%
29	83.9	87.5	4.3%	87.4	4.1%	87.6	4.4%
30	379.9	396.5	4.4%	395.1	4.0%	396.2	4.3%
	3,555.2	3,771.6	6.1%	3,749.7	5.5%	3,770.2	6.0%

Data Summary H-2
Salary Increases
School Membership

Duration	Initial Salary (Millions)	Subsequent Salary (Millions)	Actual Rate	Current Expected (Millions)	Current Rate	Proposed Expected (Millions)	Proposed Rate
1	372.3	458.9	23.3%	417.0	12.0%	435.6	17.0%
2	388.9	435.3	11.9%	425.9	9.5%	427.8	10.0%
3	371.1	407.6	9.8%	399.7	7.7%	399.0	7.5%
4	360.3	392.0	8.8%	385.8	7.1%	384.6	6.8%
5	365.0	396.1	8.5%	389.1	6.6%	388.7	6.5%
6	371.0	400.7	8.0%	393.7	6.1%	394.2	6.3%
7	376.1	405.3	7.8%	398.3	5.9%	398.6	6.0%
8	373.9	402.2	7.6%	395.2	5.7%	395.4	5.8%
9	356.4	383.2	7.5%	376.0	5.5%	376.0	5.5%
10	337.7	363.7	7.7%	356.0	5.4%	355.6	5.3%
11	330.2	353.9	7.2%	347.7	5.3%	347.0	5.1%
12	321.8	343.6	6.8%	338.5	5.2%	337.5	4.9%
13	304.6	326.1	7.1%	320.1	5.1%	318.9	4.7%
14	298.5	318.2	6.6%	313.4	5.0%	312.2	4.6%
15	289.8	307.9	6.3%	304.0	4.9%	302.8	4.5%
16	276.9	293.4	6.0%	290.2	4.8%	289.1	4.4%
17	274.9	291.0	5.9%	287.8	4.7%	286.7	4.3%
18	264.1	279.9	6.0%	276.2	4.6%	275.3	4.3%
19	249.0	263.5	5.8%	260.5	4.6%	259.5	4.2%
20	235.6	249.6	5.9%	246.2	4.5%	245.4	4.2%
21	226.6	238.5	5.3%	236.8	4.5%	235.8	4.1%
22	216.8	228.7	5.5%	226.6	4.5%	225.6	4.1%
23	203.1	214.3	5.5%	212.1	4.4%	211.3	4.0%
24	187.0	197.2	5.5%	195.2	4.4%	194.4	4.0%
25	181.6	191.2	5.3%	189.6	4.4%	188.8	4.0%
26	188.3	197.9	5.1%	196.4	4.3%	195.8	4.0%
27	200.6	210.8	5.1%	209.2	4.3%	208.6	4.0%
28	218.6	230.2	5.3%	227.8	4.2%	227.3	4.0%
29	217.6	228.7	5.1%	226.5	4.1%	226.3	4.0%
30	958.8	1,014.6	5.8%	997.2	4.0%	997.2	4.0%
	9,317.0	10,024.3	7.6%	9,838.4	5.6%	9,841.3	5.6%

Data Summary H-3
Salary Increases
Other Membership

Duration	Initial Salary (Millions)	Subsequent Salary (Millions)	Actual Rate	Current Expected (Millions)	Current Rate	Proposed Expected (Millions)	Proposed Rate
1	350.5	403.4	15.1%	392.5	12.0%	403.0	15.0%
2	321.3	349.2	8.7%	351.8	9.5%	350.2	9.0%
3	295.3	317.0	7.3%	318.0	7.7%	317.5	7.5%
4	285.2	304.9	6.9%	305.5	7.1%	304.4	6.7%
5	289.9	307.5	6.1%	309.1	6.6%	307.6	6.1%
6	299.0	315.6	5.5%	317.2	6.1%	316.6	5.9%
7	285.2	301.3	5.6%	302.1	5.9%	301.6	5.8%
8	264.9	278.8	5.2%	280.0	5.7%	279.8	5.6%
9	238.8	251.7	5.4%	251.9	5.5%	251.8	5.5%
10	214.3	225.2	5.1%	225.9	5.4%	225.7	5.3%
11	199.8	210.0	5.1%	210.4	5.3%	210.2	5.2%
12	191.2	200.6	4.9%	201.2	5.2%	201.0	5.1%
13	179.5	187.8	4.6%	188.7	5.1%	188.5	5.0%
14	168.4	176.7	4.9%	176.8	5.0%	176.7	4.9%
15	170.6	178.7	4.8%	178.9	4.9%	178.8	4.8%
16	173.3	181.1	4.5%	181.6	4.8%	181.4	4.7%
17	173.5	181.8	4.8%	181.6	4.7%	181.5	4.6%
18	168.1	175.6	4.5%	175.9	4.6%	175.7	4.5%
19	149.5	156.1	4.4%	156.4	4.6%	156.2	4.5%
20	135.1	141.4	4.7%	141.2	4.5%	141.2	4.5%
21	126.1	131.6	4.4%	131.8	4.5%	131.8	4.5%
22	115.2	120.7	4.7%	120.4	4.5%	120.4	4.5%
23	113.5	118.5	4.4%	118.5	4.4%	118.5	4.5%
24	106.8	111.4	4.3%	111.5	4.4%	111.6	4.5%
25	109.4	114.4	4.6%	114.2	4.4%	114.2	4.4%
26	118.3	123.7	4.6%	123.4	4.3%	123.5	4.4%
27	123.7	129.3	4.5%	129.0	4.3%	129.2	4.4%
28	121.2	126.6	4.4%	126.3	4.2%	126.6	4.4%
29	106.7	111.4	4.5%	111.1	4.1%	111.4	4.4%
30	417.6	435.1	4.2%	434.3	4.0%	435.9	4.4%
	6,012.1	6,367.1	5.9%	6,367.3	5.9%	6,372.3	6.0%

Data Summary H-4
Salary Increases
Special Services Membership

Duration	Initial Salary (Millions)	Subsequent Salary (Millions)	Actual Rate	Current Expected (Millions)	Current Rate	Proposed Expected (Millions)	Proposed Rate
1	53.6	63.0	17.6%	60.0	12.0%	62.7	17.0%
2	52.3	57.8	10.5%	57.2	9.5%	58.0	11.0%
3	50.8	55.3	8.9%	54.7	7.7%	55.0	8.3%
4	49.0	52.7	7.7%	52.4	7.1%	52.4	7.0%
5	56.0	59.8	6.6%	59.7	6.6%	59.7	6.5%
6	58.5	62.3	6.5%	62.0	6.1%	62.1	6.3%
7	63.7	67.7	6.3%	67.5	5.9%	67.6	6.0%
8	67.2	71.5	6.4%	71.0	5.7%	71.1	5.8%
9	62.3	66.1	6.2%	65.7	5.5%	65.7	5.5%
10	56.1	58.9	5.0%	59.1	5.4%	59.1	5.3%
11	48.6	50.9	4.8%	51.2	5.3%	51.1	5.2%
12	43.3	45.7	5.6%	45.5	5.2%	45.5	5.1%
13	38.3	39.9	4.2%	40.3	5.1%	40.2	5.0%
14	33.8	35.4	4.6%	35.5	5.0%	35.5	4.9%
15	32.8	34.5	5.4%	34.4	4.9%	34.3	4.8%
16	32.2	33.6	4.3%	33.8	4.8%	33.7	4.7%
17	33.0	34.3	4.1%	34.5	4.7%	34.5	4.6%
18	33.0	34.6	4.9%	34.5	4.6%	34.4	4.5%
19	27.5	28.6	4.2%	28.7	4.6%	28.7	4.5%
20	25.6	26.8	4.7%	26.8	4.5%	26.8	4.5%
21	26.9	28.2	4.7%	28.1	4.5%	28.1	4.5%
22	25.1	26.3	4.9%	26.3	4.5%	26.3	4.5%
23	25.0	26.1	4.6%	26.1	4.4%	26.1	4.5%
24	24.5	25.5	4.3%	25.5	4.4%	25.6	4.5%
25	22.5	23.4	3.9%	23.5	4.4%	23.5	4.5%
26	22.4	23.3	4.0%	23.4	4.3%	23.4	4.4%
27	20.1	20.9	4.1%	20.9	4.3%	20.9	4.3%
28	19.1	19.9	3.9%	19.9	4.2%	19.9	4.2%
29	14.6	15.3	4.4%	15.2	4.1%	15.2	4.1%
30	45.3	47.1	4.1%	47.1	4.0%	47.1	4.0%
	1,163.0	1,235.6	6.2%	1,230.7	5.8%	1,234.3	6.1%