



Firefighters' and Rescue Squad Workers' Pension Fund Valuation Data Audit

July Board Meeting
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Background

- In order to be eligible for a benefit, a Firefighters' & Rescue Squad Workers' Pension Fund member (F&R) must have 20 years of membership and 20 years of contributions.
- Many members leave before becoming vested in their benefit (reaching 20 years of membership). These members are called “lapsed” members.
- Buck, as the actuary, currently assumes that all lapsed members will return to active membership and ultimately become vested in their benefit.
- A more probable lapse assumption was not previously developed due to the lack of readily available data.
- A “deeper dive” research project was requested in order to assess the ability to create a lapse assumption that would reduce both future liabilities and the State’s contribution requirement to the Plan.

Purpose and Data Assumptions

- A lapse assumption is needed for the F&R population to develop required funding contributions
 - Determine how actual incidence of return from lapse differs from the current assumption
 - Develop an updated return from lapse assumption
 - Assess impact of assumption change on funding contributions
- Analysis based on actual member experience from 1966 through 2012
 - Rates were calculated based on the members that have lapsed and returned and those that have not returned as of 2012
 - Withdrawn and deceased members were excluded as there are assumptions for these decrements
- Review this assumption to ensure it is reasonable as required by Actuarial Standards of Practice

General Observations – Return from Lapse Experience

We reviewed lapses by age and by roster service

- Return from lapse experience is relatively uniform across member ages and roster service at the start of lapse

We also reviewed lapses up to 10 years

- Very little data for members returning after 8 years of lapse so lapse assumption was consolidated to 0% after 8 years

Recommend changing assumptions to better align with past experience

	Lapse=1	Lapse=2	Lapse=3	Lapse=4	Lapse=5	Lapse=6	Lapse=7	Lapse=8+
Return Assumption	42.00%	23.00%	14.00%	10.00%	6.00%	4.50%	3.00%	0.00%

Estimated Impact on the FYE June 30, 2017 Annual Required Contribution

	Experience Investigation*	Revised Lapse Assumption
Normal Cost	\$ 7,084,000	\$ 6,018,000
Accrued Liability	10,518,000	8,275,000
Annual Required Contribution	\$ 17,602,000	\$ 14,293,000
Impact of Lapse Assumption		\$ (3,309,000)

*Experience Investigation results based on the December 31, 2014 actuarial valuation of the Firefighters' and Rescue Squad Workers' Pension Fund, and on the methods and assumptions in the experience investigation prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016, as discussed on Slide 11.

Please note that Experience Investigation results included a preliminary lapse assumption with Annual Required Contributions savings of approximately \$3.2 million. The preliminary lapse assumption was based on partial completion of the valuation data audit. The total Annual Required Contribution savings (from both the preliminary and revised lapse assumption) is approximately \$6.5 million.

Recommendations

Recommend sending letters to multiple populations*

- Lapsed members over age 65 to encourage application for return of contributions
- Lapsed members who received return of contributions in other North Carolina administered plans to encourage application for return of contributions
- Lapsed members that are not expected to return to active employment to encourage application for return of contributions
 - After confirming they have not yet returned to work (since 2012)

Recommend performing death search on all lapsed population*

- Reaching out to survivors of deceased active members to encourage application for return of contributions

Set final assumptions (see next slide)

* RSD Staff members have already implemented many of these recommendations

Next Steps

Set final assumptions

- Estimate impact on FYE 2017 required contribution (see Slide 5)
- Board approval of recommended assumptions
- Incorporate into actuarial valuation at December 31, 2015

Load Updated Data Into ORBIT

Develop State Contribution Rate Stabilization Policy (SCRSP)

- As mandated by the General Assembly, the Board will adopt a contribution policy to promote security of benefits and stabilize the state contribution rate
- Buck will assist the Board in developing such a policy, similar to the policies developed for TSERS and LGERS
- Such a policy can be used to increase contributions in a period when investment returns are less likely to achieve 7.25%

Questions?

THANK YOU

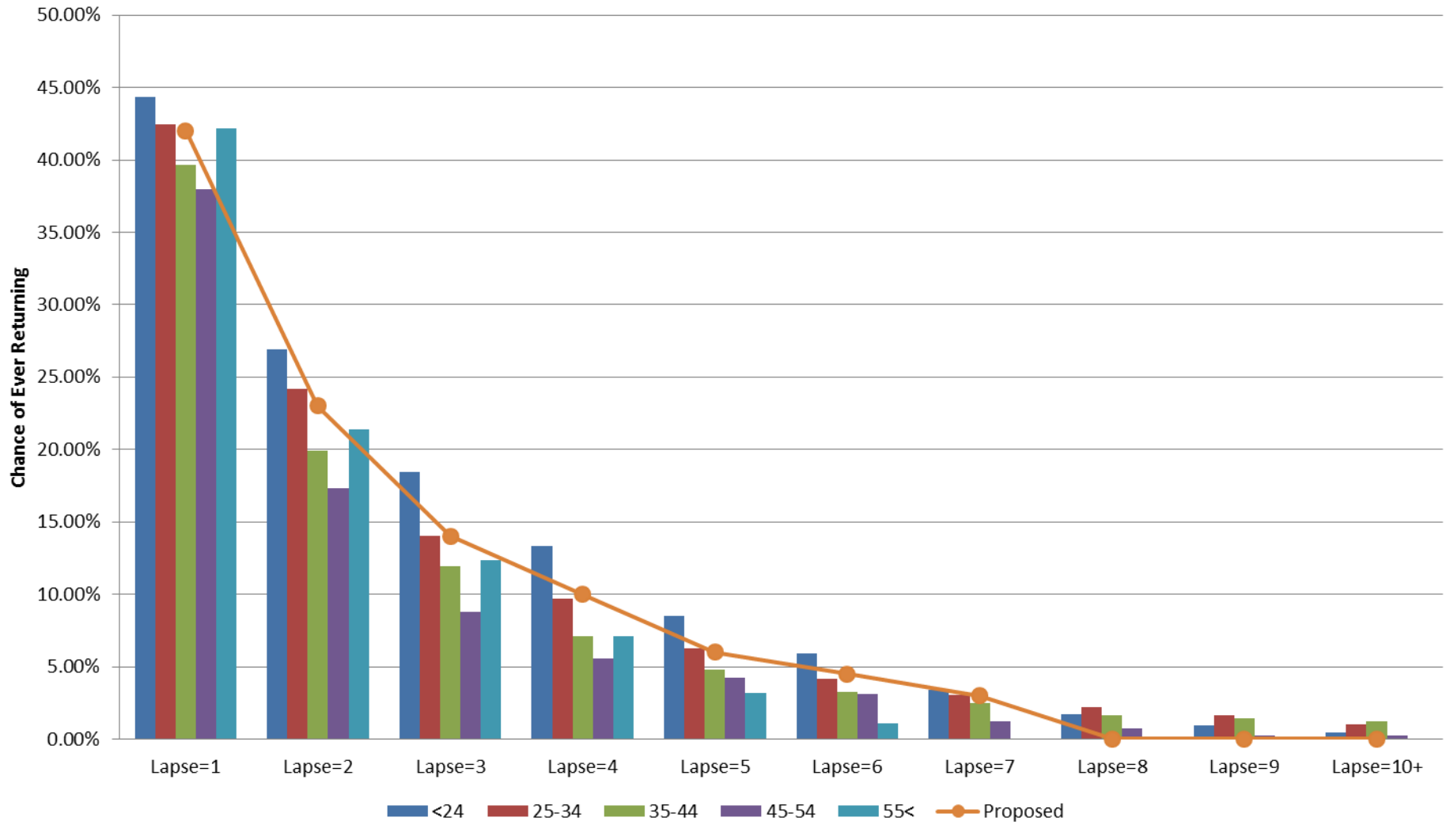
Data and Assumptions

Actual Counts

Reviewed 13,565 records as of the 2013 actuarial valuation

- Found 10,735 with actual lapses (breakdown below contains duplicates)
 - 2,005 with lapses and returned somewhere in the roster service history
 - 342 with multiple return from lapses
 - 3,391 with lapses of 8 or more years
 - Recommend contact for return of contributions
 - 7,060 currently lapsed less than 8 years
- Remaining 2,830 had updated data and no lapse

Return from Lapse by Age (at Start of Lapse)



Lapse by Age (at Start of Lapse) – Supporting Tabular Data

Numerator

Age	Lapse=1	Lapse=2	Lapse=3	Lapse=4	Lapse=5	Lapse=6	Lapse=7	Lapse=8	Lapse=9	Lapse=10
<25	496	229	141	96	58	39	22	11	6	3
25-34	955	413	211	139	86	56	41	29	22	13
35-44	641	243	132	75	49	33	25	16	14	12
45-54	248	85	39	24	18	13	5	3	1	1
54<	67	25	13	7	3	1	0	0	0	0

Denominator

Age	Lapse=1	Lapse=2	Lapse=3	Lapse=4	Lapse=5	Lapse=6	Lapse=7	Lapse=8	Lapse=9	Lapse=10
<25	1119	852	764	719	681	662	645	634	629	626
25-34	2249	1707	1505	1433	1380	1350	1335	1323	1316	1307
35-44	1618	1220	1109	1052	1026	1010	1002	993	991	989
45-54	653	490	444	429	423	418	410	408	406	406
54<	159	117	105	99	95	93	92	92	92	92

Rate of Return

Age	Lapse=1	Lapse=2	Lapse=3	Lapse=4	Lapse=5	Lapse=6	Lapse=7	Lapse=8	Lapse=9	Lapse=10
<25	44%	27%	18%	13%	9%	6%	3%	2%	1%	0%
25-34	42%	24%	14%	10%	6%	4%	3%	2%	2%	1%
35-44	40%	20%	12%	7%	5%	3%	2%	2%	1%	1%
45-54	38%	17%	9%	6%	4%	3%	1%	1%	0%	0%
54<	42%	21%	12%	7%	3%	1%	0%	0%	0%	0%

Numerator – The number of lives based on age at start of lapse and lapse period that have a lapse and returned to roster service.

- Example: There are 496 members that had a lapse of at least 1 year starting before age 25 and returned to roster service

Denominator – The number of lives based on age at start of lapse and lapse period (including those that have returned and those not expected to return).

- Example: There are 1119 members that had a lapse of at least 1 year starting before 25 including the 496 that returned and the 623 assumed not to return.

Assumptions

Except where noted below, the estimated impact of the lapse assumption is based on the plan provisions and census data used in the December 31, 2014 actuarial valuation of the Firefighters' and Rescue Squad Workers' Pension Fund, and on the methods and assumptions in the experience investigation prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016.

- We have used the same lapsed population as used for the December 31, 2014 valuation.
- We have used the same termination assumption adopted for use with the Local Governmental Employees' Retirement System (modified to take into account the new lapse assumption).
- Members who are assumed to return to work are assumed to do so at the valuation date. Members who are assumed to not return to work (and have not attained 20 years of service) are assumed to receive a refund of contributions at age 55.

Certification

These results were prepared under the direction of Larry Langer and Michael Ribble who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. These results have been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about them.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

Except where otherwise indicated, an analysis of the potential range of such future differences is beyond the scope of this report.

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