

LAW ENFORCEMENT OFFICERS' AND FIRE FIGHTERS' PLAN 2 RETIREMENT BOARD

Actuarial Reduction Factors Initial Consideration

March 23, 2005

1. Issue

Actuarial reduction factors used to calculate survivor benefits, disability benefits and death benefits are updated periodically based on changes to assumptions or experience studies but retiree benefits are not recalculated to use the adjusted factors.

2. Staff

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3. Members Impacted

This issue would apply to all LEOFF 2 retirees whose benefits were calculated using a survivor reduction factor or an early retirement reduction factor. The same issue exists in other retirement systems.

4. Current Situation

A member who chooses to provide a survivor benefit at the time of retirement has their benefit reduced so that the lifetime benefit covering both the retiree and beneficiary is actuarially equivalent to a lifetime benefit for the retiree only. Similarly, a retiree who goes out on a disability retirement prior to age 53 or the beneficiary of a member who died prior to retirement may have had their benefit actuarially reduced for "early retirement."

The Office of the State Actuary produces experience studies for LEOFF Plan 2 every five years which compare previous actuarial projections to actual experience regarding assumptions for such things as mortality, rates of disability, and retirements. New reduction factors for survivor benefits and early retirements are calculated using the updated experience. The Department of Retirement Systems adopts the new reduction factors in WAC and uses updated factors to calculate benefits for new retirees but does not recalculate the benefits of members who have already retired using the prior factors. The LEOFF Plan 2 Retirement Board is now responsible for adopting the actuarial reduction factors for LEOFF Plan 2. The next experience study is due in 2006-07.

5. Background Information

Economic and Demographic Assumptions

Actuaries use both economic and demographic assumptions to determine the projected liabilities of a plan.

“Economic assumptions” include such items as inflation and the rate of return on assets invested in the plan. These types of assumptions are usually set in statute and change infrequently.

“Demographic assumptions” are assumptions about member behavior and include such things as life expectancy, probability of disablement and probability of service retirement at a certain age. These types of assumptions are published in actuarial valuations and comprehensive annual financial reports and are adjusted periodically based on the results of actuarial studies. The most common type of study in Washington is the Actuarial Experience Study which is conducted by the Office of the State Actuary every five years.

LEOFF Plan 2 Demographics

LEOFF Plan 2 is 27 years old but is still considered a relatively young plan from an actuarial perspective. The most recent actuarial valuation of LEOFF Plan 2 identified 14,560 active members compared to just 316 annuitants.

Experience studies play an important part in younger retirement plans because they validate or adjust the demographic assumptions on which the plan’s funding is based. For example, if the original life expectancy assumptions for members are found to be low, then the liabilities of the plan increase because retirees will now be expected to receive their benefits longer. The resulting increase in liabilities would tend to increase the contributions necessary to fund the plan.

Results of the 2002 Experience Study

The 2002 Actuarial Experience Study conducted by the Office of the State Actuary covered all the State’s public retirement plans including LEOFF Plan 2. One of the most significant findings of the study with respect to LEOFF Plan 2 had to do with life expectancy. The study found that both LEOFF members and their beneficiaries tended to live longer than the assumptions predicted.

The increase in life expectancy for beneficiaries was based largely on a new national table (RP 2000) developed by the Society of Actuaries. LEOFF Plan 2 members also showed an increase in life expectancy based on Washington LEOFF experience. The reasons for this positive experience may include improvements in police & fire training, better safety apparatus and a greater understanding of some job-related health dangers such as exposure to smoke and chemicals.

The effect of this positive life expectancy experience on survivor reduction factors was significant. Although the effect of increased life expectancy would generally be to increase reduction factors, in this case the new factors were 2.5% to 16.5% lower. Presumably, this

was because the life expectancy of members increased at a far greater pace than the life expectancy for beneficiaries. Table One in the Appendix compares the previous survivor reduction factors to the new factors.

Example One below shows the how the factor changed for a retiree aged 53 with a spouse one year younger and how the retiree's benefit would be different using the updated factor.

Example One:

The survivor factor for a retiree who chose a joint and 100% survivor option for a spouse one year younger changed from 0.771 to 0.865 as a result of the 2002 Actuarial Experience Study. A member who retired with 20 years of service and an average final salary of \$65,000 would have received a base benefit of \$1670.50/month using the old factors. But, a member with the same years of service and average final salary who retired using the new factors would receive a base benefit of \$1874.7/month.

$$\$65,000/12 \times 20 \times 2\% \times 0.771 = \$1,670.50$$

$$\$65,000/12 \times 20 \times 2\% \times 0.865 = \$1,874.17$$

Actuarial Equivalence

Statutes require certain types of benefit options, such as survivor benefits, to be “actuarially equivalent.” For example, RCW 41.26.460 provides that the service retirement beneficiary options shall be calculated so as to be actuarially equivalent to each other.

Table One in the Appendix shows the various reduction factors for the three survivor options currently available to LEOFF Plan 2 retirees: Option 2 (Joint and 100%), Option 3 (Joint and 50%) and Option 4 (Joint and 66.67%).

6. Policy Questions

Ongoing Actuarial Equivalence

RCW 41.26.460 does not specifically address the question of whether the required “actuarial equivalence” is for the time of retirement only or whether the required equivalence should be maintained throughout the period of time that a retiree or beneficiary receives payments.

Ongoing actuarial equivalence would mean that the benefit being paid to a retiree or beneficiary would be adjusted when actuarial factors are changed due to changing assumptions.

The Department of Retirement Systems has resolved this question via agency rule development. WAC 415-02-300(6) provides that “the tables, schedules and factors in this chapter shall apply to the calculation of retirement allowances for those who retire on or after September 1, 2002, (until subsequent amendment).” The Department did not adjust the benefits of prior retirees when the new factors were adopted. A change in that practice would require DRS to implement a method for recalculating a retiree's benefit using new factors.

However, when the Department adopted WAC 415-108-805 and 415-112-555 implementing the new minimum benefit for Plan 1 retirees in the Teachers' Retirement System and the Public Employees' Retirement System, the Department used the "the same factors used to calculate their benefit at the time of retirement; or for beneficiaries, at the time benefit payments commenced." The same policy approach would be an option for implementing revised actuarial factors.

The Office of the State Actuary does not recalculate the liabilities associated with retired members for actuarial valuation purposes when new factors are adopted. A change in that practice could mean increased liabilities in the next actuarial valuation since the experience in the plan so far appears to have been positive. An increase in liabilities could mean an increase in the amount of member, employer and state contributions necessary to fund the plan although the number of retirees in LEOFF Plan 2 is fairly small.

Future experience could result in either higher or lower factors. Application of new factors to decrease a retiree's pension might not be legally permissible.

All of the State's public retirement plans use actuarial reduction factors to calculate survivor benefits and the reductions associated with retiring before normal retirement age. The question of how to apply new actuarial reduction factors has not been discussed by the Select Committee on Pension Policy or its predecessor, the Joint Committee on Pension Policy.

The question of implementing new actuarial reduction factors which would result in a reduced pension for retirees has not been addressed in the Courts. The Supreme Court in Washington has long held that new reduction factors may be applied to retirements that occur after the effective date of the new factors [*King County Employees' Association v. State Employees' Retirement Board*, 54 Wn.2d 1, 336 P.2d 387 (1959)].

RCW 41.26.720(a) provides that the LEOFF Plan 2 Retirement Board is required to adopt actuarial tables, assumptions and cost methodologies for LEOFF Plan 2. The next Actuarial Experience Study from the Office of the State Actuary is expected in 2006-07. The Board will be required to adopt any changes to actuarial reduction factors at that time.

7. Appendix

Table One:
Changes in Survivor Reduction Factors as a result of the 2002 Experience Study
OPTION 2 FACTORS

Joint and 100%

Age Difference Beneficiary Younger	9/1/02 Factor	1/1/96 Factor	Factor Difference
-20	0.9530000	0.9280000	0.0250
-19	0.9500000	0.9230000	0.0270
-18	0.9470000	0.9180000	0.0290
-17	0.9440000	0.9120000	0.0320
-16	0.9400000	0.9060000	0.0340
-15	0.9370000	0.8990000	0.0380
-14	0.9330000	0.8920000	0.0410
-13	0.9290000	0.8850000	0.0440
-12	0.9250000	0.8770000	0.0480
-11	0.9210000	0.8690000	0.0520
-10	0.9170000	0.8610000	0.0560
-09	0.9130000	0.8540000	0.0590
-08	0.9080000	0.8460000	0.0620
-07	0.9040000	0.8380000	0.0660
-06	0.8990000	0.8300000	0.0690
-05	0.8940000	0.8230000	0.0710
-04	0.8900000	0.8140000	0.0760
-03	0.8850000	0.8060000	0.0790
-02	0.8800000	0.7980000	0.0820
-01	0.8750000	0.7900000	0.0850
0	0.8700000	0.7800000	0.0900
01	0.8650000	0.7710000	0.0940
02	0.8600000	0.7600000	0.1000
03	0.8550000	0.7510000	0.1040
04	0.8500000	0.7430000	0.1070
05	0.8450000	0.7350000	0.1100
06	0.8400000	0.7280000	0.1120
07	0.8350000	0.7210000	0.1140
08	0.8300000	0.7140000	0.1160
09	0.8250000	0.7060000	0.1190
10	0.8210000	0.7000000	0.1210
11	0.8160000	0.6940000	0.1220
12	0.8120000	0.6870000	0.1250
13	0.8080000	0.6810000	0.1270
14	0.8030000	0.6730000	0.1300
15	0.7990000	0.6640000	0.1350
16	0.7950000	0.6560000	0.1390
17	0.7920000	0.6500000	0.1420
18	0.7880000	0.6440000	0.1440
19	0.7840000	0.6390000	0.1450
20	0.7810000	0.6340000	0.1470
21	0.7770000	0.6290000	0.1480
22	0.7740000	0.6250000	0.1490
23	0.7710000	0.6200000	0.1510

24	0.7680000	0.6160000	0.1520
25	0.7650000	0.6120000	0.1530
26	0.7630000	0.6080000	0.1550
27	0.7600000	0.6040000	0.1560
28	0.7570000	0.6010000	0.1560
29	0.7550000	0.5980000	0.1570
30	0.7530000	0.5950000	0.1580
31	0.7500000	0.5920000	0.1580
32	0.7480000	0.5890000	0.1590
33	0.7460000	0.5860000	0.1600
34	0.7440000	0.5830000	0.1610
35	0.7420000	0.5810000	0.1610
36	0.7410000	0.5780000	0.1630
37	0.7390000	0.5760000	0.1630
38	0.7370000	0.5740000	0.1630
39	0.7360000	0.5710000	0.1650
40	0.7340000	0.5690000	0.1650

OPTION 3 FACTORS

Joint and 50%

Age Difference Beneficiary Younger	9/1/02 Factor	1/1/96 Factor	Factor Difference
-20	0.9760000	0.9630000	0.0130
-19	0.9740000	0.9600000	0.0140
-18	0.9730000	0.9570000	0.0160
-17	0.9710000	0.9540000	0.0170
-16	0.9690000	0.9510000	0.0180
-15	0.9670000	0.9470000	0.0200
-14	0.9650000	0.9430000	0.0220
-13	0.9630000	0.9390000	0.0240
-12	0.9610000	0.9350000	0.0260
-11	0.9590000	0.9300000	0.0290
-10	0.9570000	0.9260000	0.0310
-09	0.9540000	0.9220000	0.0320
-08	0.9520000	0.9170000	0.0350
-07	0.9490000	0.9120000	0.0370
-06	0.9470000	0.9070000	0.0400
-05	0.9440000	0.9030000	0.0410
-04	0.9420000	0.8980000	0.0440
-03	0.9390000	0.8930000	0.0460
-02	0.9360000	0.8880000	0.0480
-01	0.9330000	0.8830000	0.0500
0	0.9300000	0.8770000	0.0530
01	0.9270000	0.8710000	0.0560
02	0.9240000	0.8640000	0.0600
03	0.9220000	0.8580000	0.0640
04	0.9190000	0.8530000	0.0660
05	0.9160000	0.8480000	0.0680
06	0.9130000	0.8430000	0.0700
07	0.9100000	0.8380000	0.0720
08	0.9070000	0.8330000	0.0740
09	0.9040000	0.8280000	0.0760
10	0.9020000	0.8240000	0.0780
11	0.8990000	0.8200000	0.0790
12	0.8960000	0.8150000	0.0810
13	0.8940000	0.8110000	0.0830
14	0.8910000	0.8050000	0.0860
15	0.8880000	0.7990000	0.0890
16	0.8860000	0.7930000	0.0930
17	0.8840000	0.7880000	0.0960
18	0.8810000	0.7840000	0.0970
19	0.8790000	0.7800000	0.0990
20	0.8770000	0.7760000	0.1010
21	0.8750000	0.7730000	0.1020
22	0.8730000	0.7700000	0.1030

23	0.8710000	0.7660000	0.1050
24	0.8690000	0.7630000	0.1060
25	0.8670000	0.7600000	0.1070
26	0.8650000	0.7570000	0.1080
27	0.8640000	0.7540000	0.1100
28	0.8620000	0.7510000	0.1110
29	0.8600000	0.7480000	0.1120
30	0.8590000	0.7460000	0.1130
31	0.8570000	0.7440000	0.1130
32	0.8560000	0.7410000	0.1150
33	0.8550000	0.7390000	0.1160
34	0.8530000	0.7370000	0.1160
35	0.8520000	0.7350000	0.1170
36	0.8510000	0.7330000	0.1180
37	0.8500000	0.7310000	0.1190
38	0.8490000	0.7290000	0.1200
39	0.8480000	0.7270000	0.1210
40	0.8470000	0.7250000	0.1220

OPTION 4 FACTORS

Joint and 66.67%

Age Diff	9/1/02 Factor	1/1/96 Factor	Factor Difference
-20	0.9680000	0.9510000	0.0170
-19	0.9660000	0.9470000	0.0190
-18	0.9640000	0.9440000	0.0200
-17	0.9620000	0.9400000	0.0220
-16	0.9590000	0.9350000	0.0240
-15	0.9570000	0.9300000	0.0270
-14	0.9540000	0.9260000	0.0280
-13	0.9520000	0.9210000	0.0310
-12	0.9490000	0.9150000	0.0340
-11	0.9460000	0.9090000	0.0370
-10	0.9430000	0.9030000	0.0400
-09	0.9400000	0.8980000	0.0420
-08	0.9370000	0.8920000	0.0450
-07	0.9340000	0.8860000	0.0480
-06	0.9300000	0.8800000	0.0500
-05	0.9270000	0.8750000	0.0520
-04	0.9240000	0.8680000	0.0560
-03	0.9200000	0.8620000	0.0580
-02	0.9160000	0.8560000	0.0600
-01	0.9130000	0.8500000	0.0630
0	0.9090000	0.8420000	0.0670
01	0.9050000	0.8350000	0.0700
02	0.9020000	0.8270000	0.0750
03	0.8980000	0.8200000	0.0780
04	0.8940000	0.8130000	0.0810
05	0.8910000	0.8070000	0.0840
06	0.8870000	0.8010000	0.0860
07	0.8830000	0.7950000	0.0880
08	0.8800000	0.7890000	0.0910
09	0.8760000	0.7830000	0.0930
10	0.8730000	0.7780000	0.0950
11	0.8700000	0.7730000	0.0970
12	0.8660000	0.7680000	0.0980
13	0.8630000	0.7620000	0.1010
14	0.8600000	0.7550000	0.1050
15	0.8570000	0.7480000	0.1090
16	0.8540000	0.7410000	0.1130
17	0.8510000	0.7360000	0.1150
18	0.8480000	0.7310000	0.1170
19	0.8450000	0.7260000	0.1190
20	0.8420000	0.7220000	0.1200
21	0.8400000	0.7180000	0.1220
22	0.8370000	0.7150000	0.1220

23	0.8350000	0.7100000	0.1250
24	0.8320000	0.7070000	0.1250
25	0.8300000	0.7030000	0.1270
26	0.8280000	0.7000000	0.1280
27	0.8260000	0.6960000	0.1300
28	0.8240000	0.6940000	0.1300
29	0.8220000	0.6900000	0.1320
30	0.8200000	0.6880000	0.1320
31	0.8180000	0.6850000	0.1330
32	0.8170000	0.6820000	0.1350
33	0.8150000	0.6800000	0.1350
34	0.8140000	0.6770000	0.1370
35	0.8120000	0.6750000	0.1370
36	0.8110000	0.6730000	0.1380
37	0.8090000	0.6710000	0.1380
38	0.8080000	0.6690000	0.1390
39	0.8070000	0.6660000	0.1410
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WASHINGTON STATE LEGISLATURE
Office of the State Actuary

March 15, 2005

TO: Steve Nelsen, Executive Director
 LEOFF 2 Retirement Board

FROM: Marty McCaulay, Associate Actuary
 Office of the State Actuary

CC: Matt Smith, State Actuary
 Office of the State Actuary

**RE: PROPOSED CHANGES TO OPTIONAL REDUCTION FACTORS
 POST-RETIREMENT**

This memo will present the results of pricing the proposed ad hoc update to the optional reduction factors for annuitants whose original benefits began before September 30, 2002.

Members Impacted

Of the 316 annuitants in pay status as of September 30, 2003, we found 108 who had retirement dates earlier than September 30, 2002, had a reduction for a joint and survivor payment option, had a reduction for retiring before the plan’s normal retirement age, or had reductions for both. Of those 108 members, we found that 103 members' retirement benefits would be increased by replacing these factors with the current factors from the Washington Administrative Code (WAC). As a result, annual benefits would increase \$152,976. The details of the annual benefit increase are shown below:

		Normal Retirement with Joint and Survivor Annuity	Early Retirement with Life Annuity	Early Retirement with Joint and Survivor Annuity	All
Sum	Number Impacted	77	10	16	103
	Annual Benefit	\$1,025,523	\$117,878	\$237,155	\$1,380,555
	Updated Annual Benefit	\$1,132,176	\$125,636	\$275,719	\$1,533,532
	Annual Increase	\$106,653	\$7,759	\$38,564	\$152,976

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		Normal Retirement with Joint and Survivor Annuity	Early Retirement with Life Annuity	Early Retirement with Joint and Survivor Annuity	All
Average	Annual Benefit	\$13,318	\$11,788	\$14,822	\$13,403
	Updated Annual Benefit	\$14,704	\$12,564	\$17,232	\$14,889
	Annual Increase	\$1,385	\$776	\$2,410	\$1,485
	Percentage Increase	10.40%	6.58%	16.26%	11.08%

Costs

Overall, this proposed post-retirement benefit adjustment would create a fully projected liability increase and a credited projected liability increase for LEOFF 2 of about \$2 million and a total contribution rate increase of 0.02%. Of that increase, 0.01% would be charged to the local employer and the member rate increase would be 0.01%. The resulting fiscal impact would be as follows, based on an assumed effective date of the rate increase of September 1, 2005:

LEOFF 2			
(\$ in millions)	05-07	07-09	05-30
State	\$0.0	\$0.0	\$0.0
Local Employer	\$0.2	\$0.2	\$2.1
Employee	\$0.2	\$0.2	\$2.1

Assumptions

We assumed that this would be a one-time increase that would only apply to members in pay status with benefit commencement dates before September 2002. We assumed that it would only apply to joint and survivor annuitants and to early retirements. We assumed that only upward adjustments would be made. We assumed that beneficiaries and disabled annuitants would be treated the same as service retirees. We assumed that affected annuitants would not be required to make additional contributions based on rates that would have been in effect if the updated assumptions had been in effect while they were actively employed under the system. We assumed that future changes in factors would not result in future benefit adjustments. We also assumed this increase would not take effect until September 2005 at the earliest, with no retroactive application, so we subtracted the present value of two years' benefit increases from the liability determined at September 30, 2003.

Other Considerations

It is an industry-wide standard of practice to periodically update administrative factors for changes in actuarial experience or actuarial assumptions. If experience differs from the assumptions, and the underlying assumptions remain unchanged, long-term actuarial gains and losses can occur. Thus, assumptions must be periodically adjusted to assure that LEOFF 2 is neither over-funded nor under-funded.

Questions concerning administration in this area should not be reviewed in isolation of the plan's funding policy. The current administrative practice of applying updated reduction factors for optional forms of payment only to retirees who retire after the effective date of the updated factors is consistent with industry-wide standards of practice and consistent with current LEOFF 2 funding policy. This current policy attempts to systematically and fully fund members' benefits over their working lifetimes with member contributions and tax revenues supported by the generation of taxpayers receiving the benefit of the members' services.

The practice of providing post-retirement benefit increases for the exclusive benefit of existing and future retirees only when administrative factors are updated in the member's favor would result in the systematic ratcheting up of future plan liabilities. This could lead to systematic under-funding or could require systematically increasing contribution rates in the future. Current and future members, as well as current and future generations of taxpayers, would assume this cost and disproportionate transfer of risks.

It is also worth noting that assumptions other than mortality will impact reduction factors for optional forms of payment. For example, a future change in the assumed rate of investment return is very likely. A reduction in the assumed rate of investment return would increase the actuarial reduction required to provide post-retirement survivor benefits. Under current administrative practices, existing retirement benefits for retirees currently in pay status would not be reduced to reflect this type of actuarial assumption change.

The administration of benefits in this area is complicated, technical and linked to the plan sponsor's funding policy. Changes in this area of administration should not be reviewed in isolation of the plan's funding policy and plan sponsors should proceed cautiously when considering changes in this area.