

Preliminary Experience Study Report

Attachment A

LEOFF 2 Mortality

Mortality Rates for Active Employees and Retirees Without Disabilities								
New					Old			
Plan	Mortality Rates	Projection*	Male Age Offset	Female Age Offset	Mortality Rates	Projection**	Male Age Offset	Female Age Offset
LEOFF 2	RP 2000 H	Scale BB	(1)	1	RP 2000 H	2034	(1)	1

Mortality Rates for Retirees With Disabilities								
New					Old			
Plan	Mortality Rates	Projection*	Male Age Offset	Female Age Offset	Mortality Rates	Projection**	Male Age Offset	Female Age Offset
LEOFF 2	RP 2000 D	Scale BB	0	0	RP 2000 D	2034	0	0

*Projection uses 100% of Scale BB on a generational basis.

**Projection uses 50% of Scale AA to a static projection year.

RP 2000 H is the Combined Healthy Mortality Table published by the Society of Actuaries (SOA) in the year 2000.

RP 2000 D is the Combined Disabled Mortality Table published by the SOA in the same year.

The following tables provide a sample of the New and Old mortality rates by system. The New mortality rates have been projected to the year 2034 using 100 percent of Scale BB, whereas the Old mortality rates have been projected to the year 2034 using 50 percent of Scale AA.

We chose the year 2034 for illustration purposes only. The 2013 Actuarial Valuation will use the New mortality rates on a generational basis. Comparatively, the prior valuations used the Old mortality rates projected to a specified static year that was unique to each retirement plan.

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Healthy Mortality Rates (Projected to 2034)				
Plan	Male		Female	
Type	New	Old	New	Old
20	0.000311	0.000249	0.000173	0.000146
25	0.000339	0.000317	0.000193	0.000169
30	0.000372	0.000378	0.000277	0.000259
35	0.000634	0.000645	0.000464	0.000426
40	0.000922	0.000891	0.000699	0.000599
45	0.001261	0.001119	0.001104	0.000931
50	0.001801	0.001467	0.001672	0.001385
55	0.002886	0.002310	0.002606	0.002696
60	0.004682	0.004524	0.004131	0.005340
65	0.007482	0.008883	0.007266	0.010060
70	0.011845	0.015330	0.012324	0.017063
75	0.020278	0.026698	0.020541	0.027021
80	0.034651	0.048850	0.033684	0.045073
85	0.059686	0.088566	0.057297	0.077988
90	0.114256	0.155469	0.099278	0.137409
95	0.204305	0.242309	0.167376	0.198510
100	0.298141	0.330207	0.221058	0.244834
105	0.392003	0.392003	0.307811	0.307811
110	1.000000	1.000000	1.000000	1.000000

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Disabled Mortality Rates (Projected to 2034)				
Plan	Male		Female	
Type	New	Old	New	Old
20	0.020379	0.016316	0.006727	0.005670
25	0.020379	0.019034	0.006727	0.005867
30	0.020379	0.020730	0.006727	0.006283
35	0.020379	0.020730	0.006727	0.006176
40	0.020379	0.019696	0.006727	0.005768
45	0.020379	0.018082	0.006727	0.005670
50	0.026161	0.021307	0.010415	0.008629
55	0.032000	0.025619	0.013952	0.014436
60	0.033110	0.031995	0.015518	0.020057
65	0.033282	0.039514	0.018591	0.025739
70	0.037436	0.048450	0.024965	0.034565
75	0.049091	0.064631	0.034646	0.045576
80	0.065424	0.092234	0.047967	0.064186
85	0.084704	0.125690	0.066469	0.090472
90	0.125919	0.171339	0.096151	0.133080
95	0.217995	0.258545	0.158517	0.188004
100	0.311097	0.344556	0.214407	0.237467
105	0.397886	0.397886	0.293116	0.293116
110	1.000000	1.000000	1.000000	1.000000

Description Of Approach To Analyzing Mortality

Setting A Mortality Improvement Assumption

Experience indicates that the use of 100 percent of Scale BB would be prudent. Primarily, we focused the analysis on PERS and TRS, noting that the remaining systems accounted for less than 10 percent of deaths across all timeframes studied, but all systems were reviewed as part of the analysis. Mortality improvement was studied by age. Certain ages were excluded if limited data led us to believe the results were unreliable. The table below summarizes the observed mortality improvement, as a percent of Scale AA and Scale BB, split into four data windows.

	% of Scale AA	% of Scale BB
1984-2012	109%	78%
1990-2012	152%	97%
1996-2012	204%	127%
2001-2012	143%	136%

For PERS, TRS, SERS, PSERS, LEOFF, and WSPRS Combined.

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Use Of Standard Mortality Table

We believe we have sufficient data to develop our own mortality tables by fitting a standard table to the observed experience. The latest experience supports the continued use of the RP-2000 Combined Healthy Mortality (with age adjustments where warranted) for the healthy populations and projected improvements in mortality. We do not believe a separate table is required for actives and retirees. We believe the continued use of the combined table is appropriate because of the early retirement ages in our plans. Many early retirees (healthy) from these plans start collecting their plan benefit, but do not retire from the workforce. As such, we believe active mortality is a better predictor of future mortality for these early retirees than an annuitant-based mortality table.

Development Of Age Offsets

When age offsets are negative, it means people of a given age are expected to be generally healthier than others their age. In other words, their mortality experience is expected to be similar to younger people. Conversely, a positive age offset means mortality experience for a given age is expected to match that of a higher age in the general population. In terms of establishing age offsets, we extended the study period to 12 years of data (2001-2012) for purposes of minimizing the volatility in our analysis. Generally, the new age offset assumptions did not change by more than one year since the last experience study.

Analysis Of Disabled Mortality

Given the use of Scale BB with the Healthy mortality tables and the observed disabled mortality experience from our latest study, we decided to apply Scale BB for disabled mortality improvements. We also believe the same factors that improve mortality for populations without disabilities will apply to populations with disabilities. Otherwise, we did not make any changes to the disabled mortality assumptions since the last experience study. We will continue to use the RP-2000 Combined Disabled Mortality table for all plans (except LEOFF 1, which relies on the combined healthy table). We will also maintain the zero age offset assumption for males and females in all plans (except LEOFF 1, which uses a +2 age offset).

Application Of Mortality Assumptions In Valuation Software

Lastly, we simplified the approach to applying mortality improvement and age offset assumptions from the last study. Specifically, we applied age offsets directly to the RP-2000 tables and used generational mortality improvements to project mortality rates every year thereafter. The old methodology projected the RP-2000 table to the mid-point of the experience study period, applied the age offsets, then further projected the table to a static year in the future for purposes of approximating the liability impact of using generational mortality improvements. The projection to a future static year for

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this approximation is no longer necessary when we project improvements on a generational basis.

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Attachment B**LEOFF 2 Retirement Rates****High-Level Takeaways**

In general, we continue to observe members retiring later than expected. When members work longer, we see fewer observed retirements per year. As a result, we lowered existing retirement rate assumptions (as developed in the prior study) toward the level of observed retirements.

We saw that the data during the Great Recession reduced the ratio of actual-to-expected retirements in some systems by approximately half. However, we chose not to exclude the Great Recession data for the Public Safety systems (LEOFF, PSERS, and WSPRS) since we observed that actual retirement rates appeared to return to pre-recession levels much faster. We suspect this is due to higher incomes and/or benefit adequacy.

Summary

In LEOFF 2, actual retirements have been consistently lower than expected. As a result, we made additional changes to the retirement assumptions this experience study, moving the actual-to-expected ratio from 0.60 to 0.73.

Observed Experience

Fewer LEOFF2 members retired during the study period than expected. The following table shows the actual and Expected retirements by age using the Old assumptions.

LEOFF Retirement Experience by Age			
Age	Plan 2 (Males & Females)		
	Observed	Expected	Ratio
49-54	631	968	0.652
55-59	626	1,212	0.517
60-64	267	417	0.641
65-69	71	56	1.270
70+	5	10	0.500
Total	1,600	2,662	0.601

Omitted 2001 and 2007 due to odd-length valuation periods. Totals and ratios may not agree due to rounding.

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Old And New LEOFF Retirement Rates

The table below shows the actual (Observed) retirement rates over the experience study period (1995-2012), and the Old and New retirement assumptions.

LEOFF Retirement Rates			
Age	Plan 2		
	Old Rates	Observed	New Rates
50	0.045	0.015	0.030
51	0.045	0.020	0.040
52	0.044	0.046	0.050
53	0.094	0.066	0.100
54	0.114	0.070	0.100
55	0.143	0.074	0.100
56	0.143	0.069	0.100
57	0.143	0.073	0.100
58	0.192	0.101	0.150
59	0.192	0.107	0.150
60	0.192	0.107	0.150
61	0.241	0.131	0.190
62	0.241	0.206	0.230
63	0.241	0.179	0.200
64	0.241	0.142	0.200
65	0.240	0.269	0.250
66	0.240	0.317	0.250
67	0.240	0.385	0.250
68	0.239	0.250	0.250
69	0.239	0.429	0.250
70	1.000	1.000	1.000

The following table shows the actual and Expected retirements for LEOFF 2 by age using the New assumptions.

LEOFF Under New Assumptions			
Age	Plan 2 (Males & Females)		
	Observed	Expected	Ratio
49-54	631	912	0.692
55-59	626	880	0.711
60-64	267	345	0.773
65-69	71	58	1.219
70+	5	10	0.500
Total	1,600	2,205	0.726

Totals and ratios may not agree due to rounding.

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Attachment C**LEOFF 2 Termination Rates****Observed Experience**

The following table shows the Actual and Expected terminations by years of service. There were fewer terminations than the Old assumptions predicted.

LEOFF Termination Experience 1995-2010*			
Service	Actual	Expected	Ratio
0-4	1,752	1,846	0.95
5-9	796	879	0.91
10-14	512	544	0.94
15-19	267	277	0.96
20-24	123	148	0.83
25-29	23	40	0.57
30+	0	0	0.00
Total	3,473	3,734	0.93

*Omitted 2001 and 2007 due to odd-length valuation periods.

Totals and ratios may not agree due to rounding.

Actual termination counts are 93 percent of the number of terminations expected. Based on the experience, termination rates were adjusted slightly.

New Termination Rates

The table below shows the LEOFF Actual terminations over the study period compared to the numbers expected under the Old and New assumptions. The ratio shown compares Actual terminations to the number expected under the New assumptions.

LEOFF Termination Experience 1995-2010*				
Service	Actual	Old Assumption	New Assumption	Ratio
0-4	1,752	1,846	1,804	0.97
5-9	796	879	788	1.01
10-14	512	544	501	1.02
15-19	267	277	304	0.88
20-24	123	148	131	0.94
25-29	23	40	26	0.88
30+	0	0	0	0.00
Total	3,473	3,734	3,556	0.98

*Omitted 2001 and 2007 due to odd-length valuation periods.

Totals and ratios may not agree due to rounding.

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The table below presents a sampling of actual termination rates during the study period, along with the Old and New termination rates for LEOFF.

LEOFF Termination Experience 1995-2010			
Service	Actual	Old Assumption	New Assumption
0	0.1077	0.1070	0.1070
1	0.0466	0.0481	0.0481
2	0.0237	0.0245	0.0245
3	0.0193	0.0216	0.0194
4	0.0159	0.0204	0.0187
5	0.0180	0.0197	0.0181
6	0.0184	0.0193	0.0174
7	0.0170	0.0192	0.0168
8	0.0153	0.0179	0.0161
9	0.0158	0.0174	0.0155
10	0.0174	0.0170	0.0148
15	0.0120	0.0107	0.0116
20	0.0093	0.0087	0.0083
25	0.0051	0.0066	0.0051
30	0.0000	0.0015	0.0018

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Attachment D

LEOFF 2 Disability Rates

High-Level Takeaways

We set assumptions for disablements to model the payment of future disability benefits. These assumptions model both (a) the incidence of disability, and (b) the selection of the disability benefit. The future incidence of disability can be impacted by medical advancements and safety practices whereas the selection of a non-catastrophic disability benefit is a personal choice that can be impacted by economic factors. For example, significant economic downturns can reduce the affordability of certain disability benefits and reduce the number of members who select non-catastrophic disability benefits.

We observed fewer disabilities than expected during this experience study. As a result, existing disability assumptions were reduced toward a better Actual to expected fit.

We saw that the data during the Great Recession reduced the ratio of Actual-to-Expected disabilities in some systems. However, we chose not to exclude the Great Recession data for the Plans 1 (PERS 1 and TRS 1) or the Public Safety systems (LEOFF, PSERS, and WSPRS). In the public safety plans, we observed that Actual disability rates appeared to return to pre-recession levels much faster. We suspect this is due to higher incomes and/or benefit adequacy.

Observed Experience

The Actual number of LEOFF 2 members selecting disability benefits during the study period was lower than the number Expected under the current disability assumption. The following table shows the Actual and Expected disabilities, by age, over the experience study period.

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LEOFF 2 — Disability Experience 2005-12*			
Age	Actual	Expected	Ratio
20-24	0	0	0.00
25-29	1	5	0.22
30-34	2	16	0.12
35-39	11	39	0.28
40-44	16	57	0.28
45-49	22	74	0.30
50-54	56	95	0.59
55-59	41	58	0.71
60-64	16	17	0.94
65+	1	3	0.39
Total	166	364	0.46

**Omitted 2007 due to odd-length valuation period.*

Totals and ratios may not agree due to rounding.

Actual disabilities for LEOFF 2 are 46 percent of the number of disabilities Expected under the old assumptions. The old assumptions were not a good fit to the experience data.

LEOFF 2 New Disability Rates

New disability rates were developed for LEOFF 2. The next table shows the Actual disabilities over the study period compared to the numbers expected under the Old and New assumptions. The ratio shown compares Actual disabilities to the number expected under the New assumptions.

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LEOFF 2 — Disability Experience 2005-2012				
Age	Actual	Old Assumption	New Assumption	Ratio
20-24	0	0	0	0.00
25-29	1	5	3	0.37
30-34	2	16	10	0.21
35-39	11	39	24	0.47
40-44	16	57	34	0.47
45-49	22	74	44	0.50
50-54	56	95	58	0.96
55-59	41	58	44	0.93
60-64	16	17	18	0.90
65+	1	3	2	0.62
Total	166	364	237	0.70

Totals and ratios may not agree due to rounding.

The New assumptions show an Actual to Expected fit of 70 percent. The table below shows a sample of the LEOFF 2 Actual disability rates over the study period, along with the Old and New disability assumptions.

LEOFF 2 — Disability Rates 2005-2012			
Age	Actual Rate	Old Assumption	New Assumption
20	0.000000	0.000124	0.000074
25	0.000904	0.000319	0.000191
30	0.000361	0.000779	0.000467
35	0.000000	0.001345	0.000807
40	0.000210	0.002266	0.001360
45	0.000730	0.002994	0.001796
50	0.001461	0.005635	0.003236
55	0.002573	0.007955	0.005534
60	0.008696	0.010041	0.009462
65	0.000000	0.011769	0.016180
70	0.000000	0.000000	0.000000

Percent Duty Disabilities

Because members with duty-related disabilities receive different benefits than those with non-duty related disabilities, the percentage of future disabilities Expected to be duty-related must be estimated. The table on the next page shows a sample of the Actual percentage of duty disabilities observed over the study period, along with the Old and New assumptions.

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LEOFF 2 – Percent of Disabilities that are Duty Related			
2005-2012			
		Old	New
Age	Actual	Assumption	Assumption
20	0.00%	97.15%	97.25%
25	100.00%	95.71%	95.86%
30	100.00%	94.30%	94.50%
35	0.00%	92.85%	93.11%
40	100.00%	91.45%	91.75%
45	100.00%	88.60%	89.00%
50	80.00%	85.75%	86.25%
55	40.00%	82.90%	83.50%
60	80.00%	82.90%	83.50%
65	0.00%	82.90%	83.50%
70	0.00%	82.90%	83.50%

Percent Total Disabilities

It is currently assumed that 12 percent of all duty disabilities are total, or catastrophic, disabilities. There are no recommended assumption changes for total disability as a result of this experience study.

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Attachment E**LEOFF 2 Service-Based Salary Increases****Observed Experience**

The following table shows the actual and expected service-based salary increases by years of service for LEOFF. The actual service based salary increases were lower than expected for most service levels.

The Actual and Expected service-based salary growth reflects the salary growth beyond assumed general salary growth (currently assumed at 3.75 percent per year).

LEOFF Service Based Salary Increases 1984-2009			
Service	Actual	Expected	Ratio
1	10.75%	11.00%	0.98
2	7.44%	7.70%	0.97
3	5.60%	6.10%	0.92
4	3.66%	4.00%	0.91
5	2.53%	2.80%	0.91
6-10	1.33%	1.65%	0.80
11-15	1.04%	1.30%	0.80
16-20	0.95%	1.10%	0.86
21+	0.27%	0.00%	0.00
Total	2.08%	2.27%	0.92

Old, Observed, And New Salary Increases

In general, the New service-based salary increases move toward a better fit between observed and expected, but we give some credibility to the Old salary increases as well. Additionally, we give consideration to expectations of future salary increases

The Old service-based salary increase assumption was higher than the observed service-based salary increases for the first 20 service years. However, we observed higher than expected service-based salary increases after 20 years of service. For this reason, the New service-based salary increase assumption was extended by five steps.

The following tables present a sampling of our Old, Actual, and New service-based salary increases.

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The Actual salary growth reflects the total salary increase beyond observed general salary growth over the period.

LEOFF — All Plans			
Service Based Salary Increase Assumption			
Service	Old	Actual	New
1	11.00%	10.74%	10.70%
2	7.70%	7.42%	7.50%
3	6.10%	5.58%	5.90%
4	4.00%	3.64%	3.70%
5	2.80%	2.52%	2.60%
10	1.70%	1.51%	1.70%
15	1.30%	1.18%	1.20%
20	1.10%	1.22%	1.00%
25	0.00%	0.47%	0.50%
30	0.00%	0.00%	0.00%

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Attachment F**LEOFF 2 Miscellaneous Assumptions****Age Difference**

Our valuation model requires the age of the member's spouse in order to calculate the survivor benefits that are payable for the spouse's life. If this spousal data is missing from our valuation data file, we use an assumption for the age difference between the member and their spouse.

We used service and disability retiree records that elected joint and survivor benefits from our 2005 through 2012 experience study data. The Old and New Age Difference Assumptions are based on the gender of the member as follows.

LEOFF		
Member	Old Assumption	New Assumption
Age Difference		
Male	3	3
Female	(2)	(1)

Certain And Life Annuity

The standard retirement option is a monthly benefit payable for the lifetime of the member. If the member dies in retirement before the total pension payments they've received exceed the value of their accumulated contributions, the difference is paid to their beneficiary. The value of this benefit is calculated using a Certain and Life Annuity – a life annuity with a certain, or guaranteed, payment period.

We used active records from the 2012 valuation data to study expected certain periods for LEOFF 2 members. The certain, or guaranteed, period for the standard life annuity retirement option is unchanged from the current assumption of five years.

Duty-Death Benefits

If a member dies while in the course of employment, special benefits are paid to their beneficiary. These include a one-time lump sum of \$214,000 in 2008, increased by inflation each year, and subsidized survivor annuities that are not reduced for early retirement or for being paid over the survivor's lifetime.

Based on data collected from the Department of Retirement Systems, we revised the duty-death rate for LEOFF 2 as fewer than expected deaths occurred while in the course of employment.

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LEOFF	
Current Assumption	Updated Assumption
0.0376%	0.0350%

If an inactive LEOFF 2 member dies from a disease or infection that was contracted while employed as an active LEOFF 2 member, their survivor will receive a one-time lump sum of \$214,000 in 2008, increased by inflation each year. The survivor may also receive an unreduced annuity.

Since 1996, ten duty-death lump sum payments have been paid to survivors of LEOFF retirees who passed away from a duty related illness or infection. Based on the limited observations, we did not revise any of the valuation assumptions associated with duty-death benefits for inactive members. We will continue to monitor these assumptions. As a reference, the current valuation assumptions for duty death benefits to inactive members are summarized below.

Fire fighters that pass away within a certain extended period of time after they stop working are eligible for duty-death benefits. This extended period of time from termination is three months for each year of service to a maximum of 60 months.

These additional benefits are provided to the member at no cost. Our valuation model requires an assumption about the average length of service for active members who might be eligible for these benefits in the future. There is also an assumption that estimates the percentage of LEOFF Plan 2 members who are fire fighters.

Based on historical active and annuitant valuation data, the following table shows the average years of service for active members and the resulting extended period of time for eligibility of this benefit under the current assumption.

LEOFF Plan 2 Expected Average Length of Service		
Current Assumption		
Status	Years of Service (Unrounded)	Extended Period (In Years)
Disability	16.26	4
Termination	14.20	4
Retirement	27.78	5

For LEOFF 2 fire fighters going on disability, the valuation assumes a portion of those will die due to occupational disease.

LEOFF Plan 2 Occupational Disease Death Rates for Fire Fighters	
Age	Rate
Less Than 50	0.147415
At least 50	0.273934

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The updated percent fire fighter assumption is 45 percent, compared to the current assumption of 43 percent.

Member Salaries

Each year we review the salaries reported in the valuation data for reasonableness and make salary adjustments when necessary. We also set default salaries for data that is not reported or is considered unreliable.

We used active records from the 2012 valuation data to study member salaries.

Maximum Salaries were capped at \$500,000 for all systems and plans in our prior experience study. Since our valuation software limits benefits using projected Internal Revenue Service maximum salaries (the maximum salary for 2013 was \$255,000), we have removed this salary cap from our data processing checks.

Minimum Salaries are determined by plan and reflect full time employment. For LEOFF 2, the minimum salary for 2013 is \$47,000. This is determined as the salary level that 99 percent of all plan salaries will exceed.

Low-Service Salary assumption is used to adjust salaries for members that have less than two months of service in the current valuation year. This adjustment is necessary because our valuation model assumes all active members become full-time in the future and salary data for low-service members is not reliable.

We use the average salary for actives with one year of service and adjust the salary with one year of the general salary increase assumption to bring it forward to the current valuation year. Then, to reflect that not all members with low service are new members, we adjust this entry salary by our step salary increase scale. There is not a set salary amount for this assumption, but rather a process that takes place to assign a default salary for any given set of circumstances.

Terminated Vested Salary is used to estimate the average final salary for terminated and vested members when the actual salary data is missing. We estimate this amount by average pay, by system, in various service groups. The salary is adjusted by the general salary increase assumption to reflect the number of years between the date of termination and the date the average salary is determined. The following table shows the 2013 base salaries for LEOFF by service group.

Terminated Vested Base Salaries as of 2013	
Years of Service	LEOFF
Less Than 5	\$75,000
At least 5, Less Than 10	87,000
At least 10, Less Than 15	94,000
At least 15, Less Than 20	99,000
At least 20, Less Than 25	105,000
At Least 25	\$113,000

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Percent Male/Female

Our valuation data requires a gender code for each plan member in order to calculate and project benefits accurately. Some assumptions used in the actuarial valuation are gender-based, such as mortality and disability, and occasionally the data we receive is missing gender information. As a result, we make assumptions as to the percent male/female in order to assign a missing gender code.

We used active records from the 1983 through 2012 valuation data to study percent male/female. The assumptions for LEOFF are 90 percent male and 10 percent female.

Percent of Final Average Salary for Catastrophic Disability Benefit

LEOFF 2 pays 70 percent of final average salary if a member is totally disabled; however the member may be eligible to receive benefits from other sources besides the plan, like Social Security and the Department of Labor and Industries (L&I). The maximum amount of benefits received from all sources cannot exceed 100 percent of a member's final average salary. We estimate the expected amount of offsets from Social Security and L&I to determine the expected percent of final average salary that will be paid from the plan when a catastrophic disability occurs. Twelve percent of all disabilities in LEOFF are assumed to be catastrophic.

Percent of Final Average Salary Paid By Plan After Catastrophic Disability	
Prior Assumption	Updated Assumption
34%	44%

This assumption relies on the following variables that were estimated based on data provided by LEOFF 2, current valuation data, and additional research.

- Percent of members that are fire fighters versus law enforcement.
- Percent eligible for Social Security.
- Percent eligible for L&I.
- Washington State Average Wage.

The increase is largely due to reviewing the plan benefits of the current 29 members that are in receipt of catastrophic disability benefits. Seven of the 29 are not receiving any compensation from L&I, therefore their plan benefit was higher than previously assumed.

Percent Vested

Members who leave eligible positions, but are not annuitants in the system, are generally considered inactive, or terminated. Some of these members may be vested in their plan and entitled to a future annual benefit. Still other members are not vested, but may return to active employment at some time in the future. Any member who terminates has the right to withdraw their contributions, with interest. Members of LEOFF 2 who make such withdrawals lose their membership service and forfeit their rights to future benefits.

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The Percent Vested assumption models the likelihood that terminated vested members will leave their savings intact and be entitled to deferred retirement benefits.

We used experience study records from 1995-2010 to count terminations, and among those, members who withdraw their savings. The following table shows a sample of the actual percent vested rates, the Old assumptions, and the New assumptions by service.

LEOFF 2 Percent Vested			
Male & Female			
Service Years	Actual Rates	Old Assumption	New Assumption
0	0.6500	0.0000	0.0000
5	0.3756	0.2400	0.3250
10	0.3765	0.2400	0.3750
15	0.4024	0.2700	0.4000
20	0.6957	0.6900	0.6000
25	0.7778	0.9100	0.9000
30+	0.0000	0.9100	0.9500

Ratio Of Survivors Of Active Deaths Selecting Annuities

This assumption models the ratio of active deaths whose survivors select annuities.

We used experience study records from 1995-2012 to count members who die and leave a beneficiary who collects a survivor annuity benefit. To determine the ratio, we set a trend line to the observed rates of survivors selecting annuities. The following table shows a sample of the actual ratio of survivors selecting annuities, the Old assumptions, and the New assumptions, by age and by gender.

LEOFF 2 Ratio of Survivors of Active Deaths Selecting Annuities			
Male & Female			
Age	Actual Rates	Old Assumptions	New Assumptions
35	0.5000	0.0728	0.2837
40	0.4000	0.1714	0.4310
45	0.5000	0.2701	0.5220
50	0.7143	0.3030	0.5881
55	1.0000	0.4017	0.6400
60	0.7500	0.5332	0.6827
65	0.0000	0.5662	0.7521
70	0.0000	0.5662	0.7521
75	0.0000	0.5662	0.7521
80	0.0000	0.5662	0.7521

Terminated Vested Indexed Benefit

Any LEOFF 2 member that terminates from employment with 20 or more years of service will receive a pre-retirement COLA of 3 percent per year. The COLA is paid on their accrued benefit amount until the date they retire. Our valuation model requires an assumption for the number of years that the member will receive pre-retirement COLAs.

Preliminary Experience Study Report

Members with 20 or more years of service have subsidized early retirement reduction factors starting at age 50. As a result, LEOFF 2 members are assumed to retire at age 50.

We chose not to make any adjustments to this assumption as a result of this experience study.

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