



Preliminary Experience Study Report

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Office of the State Actuary

"Securing tomorrow's pensions today."

June 18, 2008

Today's Presentation

- Summarize the preliminary results of our study and recommendations
- Help prepare you for your rate adoption in July
- There's a lot of ground to cover today
- You don't need to master the material today
- Fortunately, no decisions required at this meeting



Presentation Structure

- Start with some background
- Review recommendation summary
- Step into some details on each major assumption group
- Handouts available to supplement presentation
 - A more detailed reference for after the meeting



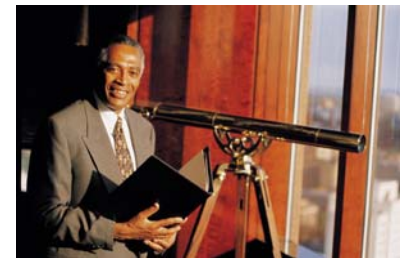
What Is An Experience Study?

- Review of current assumptions
 - How do they compare with actual experience?
 - Do they need to change?
- Assumptions help us estimate
 - When benefits are paid
 - How much is paid
 - How long they're paid



Why Do We Perform Them?

- Things change
- Ensure assumptions remain reasonable
 - Reasonable assumptions contribute to reasonable funding
- Important part of systematic actuarial funding



How Do We Perform Them?

- Data driven
 - Over 20 years of experience in some cases
- Involve judgment
 - Past not always the best predictor of future
- Consider impact of any change
 - Reasonable conservatism
- Outside review and audit
 - Standard practice in Washington

Why Are The Results Preliminary?

- Actuarial audit in progress
- The results may change
- Final results available in July



Preliminary Budget Impacts Are Short Term

- All assumptions revisited in six years
- Assumption changes don't change the actual cost of benefits
- Actual plan costs come from actual plan experience
- Assumption changes impact when the costs occur
- Financing costs versus actual costs



Summary Of Recommended Assumption Changes

■ Mortality

- Update table and project future improvement
- Increases short-term costs

■ Retirement

- Changes to reflect later retirement
- Decreases short-term costs

■ Termination

- Changes to reflect fewer workers staying to retirement
- Decreases short-term costs



Summary Of Recommended Assumption Changes (Continued)

- Disability
 - No changes recommended at this time
- Salary increases
 - Lower the “general salary” increase assumption
 - Lower “service based” salary increase assumption
 - Decreases short-term costs
- Miscellaneous assumptions
 - Updates to current assumptions
 - Increases short-term costs



Preliminary 2009-11 Budget Impacts
All Changes Except General Salary Increase

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	(\$10.2)	(\$15.3)	(\$25.5)

Preliminary Contribution Rate Impacts

All Changes Except General Salary Increase

Increase	Member	Local Employer	State
LEOFF 2	(0.81)%	(0.48)%	(0.33)%



Preliminary 2009-11 Budget Impacts

All Changes

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	(\$15.6)	(\$23.4)	(\$39.0)



Preliminary Contribution Rate Impacts

All Changes

Increase	Member	Local Employer	State
LEOFF 2	(1.24)%	(0.74)%	(0.50)%





Recommended Mortality Assumptions



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Mortality “Talk”

- “RP-2000” mortality table
 - Latest national table published by the Society of Actuaries
 - Industry standard
 - RP = Retired Pensioners
 - 2000 = Year table was released
- “Static” table
 - When you don’t project longer life spans in the future
- “Projected” table
 - When you project longer life spans in the future
- “Scale AA”
 - A table used to project longer life spans
 - Published by the Society of Actuaries

The Mortality “Two-Step”

- Recommend a mortality table
 - With age adjustments to fit your population
- Recommend a projection scale and method



Recommended Mortality Tables

- Continue to use the RP-2000 mortality table
- Increase current age adjustments to reflect lower mortality for males; higher mortality for females
- Switch from custom table to “RP-2000 Disabled” table for retirees with disabilities



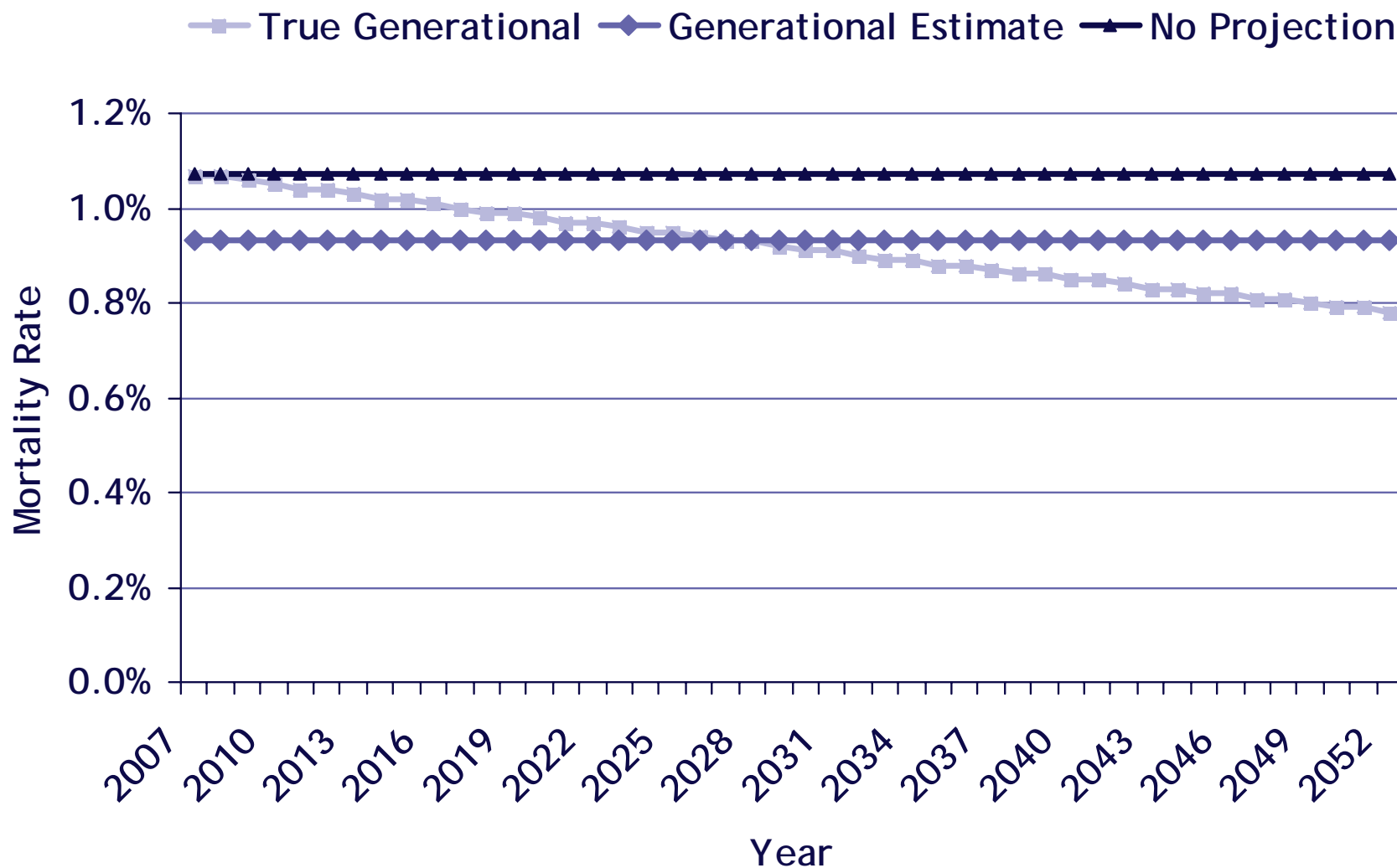
Recommended Projection Scale

- 50 percent of Scale AA
- Applied to all plans
- Consistent with observed mortality improvement in our plans
- Reduces long-term financing costs if mortality improvements continue
- Use of 50 instead of 100 percent of Scale AA recognizes that future improvement may slow down

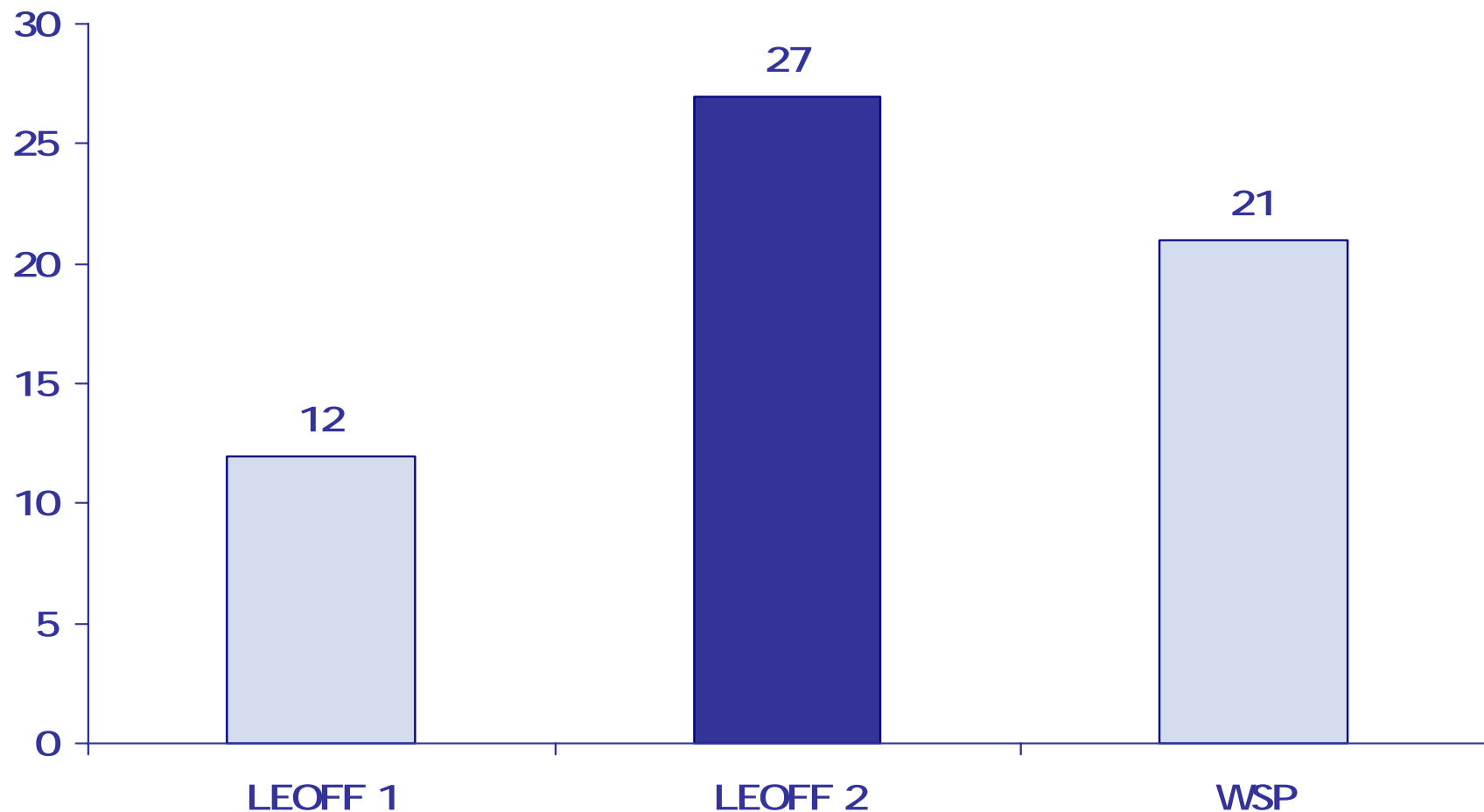
Mortality Projection Methods

- True generational
 - A different mortality table for each future year of the valuation
- Generational estimate
 - A projection of the current mortality table to a fixed future year
 - Can closely approximate “true generational” method
 - Easier to administer
- Generational estimate results in different projection years for each plan
- Recommended method - Generational estimate

Example Of Projection Methods



Recommended Years Of Projection Under Generational Estimate[☆]



**Applied to mortality tables from the valuation date.*



Recent Federal Legislation For Private-Sector Plans

- The Pension Protection Act of 2006 (PPA) requires projection of static mortality tables
 - Using 100 percent of Scale AA
 - 15-year projection for actives
 - 7-year projection for retirees
- PPA takes the “one size fits all” approach for projection years
 - We can tailor our projection to LEOFF 2
 - PPA approach not required for LEOFF 2
- PPA does allow use of generational mortality tables
- Federal government interest in public plans increasing



Is This Change Affordable?

- Not a question your actuary can answer
- However, remember that if mortality continues to improve actual plan costs will increase
- The budget choice is to pay now or pay more later

Preliminary 2009-11 Budget Impacts

Mortality Change – Table Update Only

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	\$4.3	\$6.4	\$10.7



Preliminary Contribution Rate Impacts Mortality Change – Table Update Only

Increase	Member	Local Employer	State
LEOFF 2	0.34%	0.20%	0.14%



Preliminary 2009-11 Budget Impacts

Mortality Change – Table Projection Only

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	\$7.4	\$11.1	\$18.6



Preliminary Contribution Rate Impacts Mortality Change – Table Projection Only

Increase	Member	Local Employer	State
LEOFF 2	0.60%	0.36%	0.24%



Supporting Mortality Data

- See Attachment A
- Current assumptions
- Recommended assumptions
- Observed mortality improvement





Recommended Retirement Assumptions



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People Are Working Longer/Delaying Retirement

- Sharp decrease in retirement experience over last six years
- Possible reasons
 - Longevity risk
 - Higher health care costs
 - Inadequate savings



Summary Of Recommended Retirement Assumptions

- Reduce current rates to reflect later retirement
- Latest experience blended with current assumptions to avoid excessive adjustment to current rates
- Further reductions may be necessary next study if recent trend continues

Preliminary 2009-11 Budget Impacts

Retirement Change Only

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	(\$16.4)	(\$24.6)	(\$41.0)



Preliminary Contribution Rate Impacts Retirement Change Only

Increase	Member	Local Employer	State
LEOFF 2	(1.31)%	(0.78)%	(0.53)%



Supporting Retirement Data

- See Attachment B
- Observed retirement experience
- Current assumptions
- Recommended assumptions





Recommended Termination Assumptions



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Fewer Workers Are Staying To Retirement

- Every system experienced more terminations than expected during study
- Possible reason
 - Strong economy during study



Summary Of Recommended Termination Assumptions

- Increase current rates to reflect fewer workers staying to retirement
- Latest experience blended with current assumptions
- Further reductions may be necessary next study if recent trend continues

Preliminary 2009-11 Budget Impacts

Termination Change Only

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	(\$0.8)	(\$1.1)	(\$1.9)



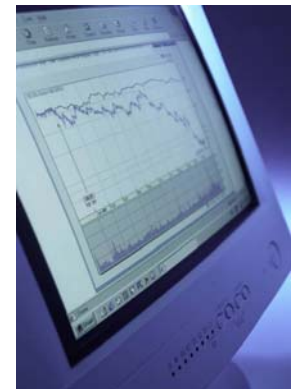
Preliminary Contribution Rate Impacts Termination Change Only

Increase	Member	Local Employer	State
LEOFF 2	(0.06)%	(0.04)%	(0.02)%



Supporting Termination Data

- See Attachment C
- Observed termination experience
- Current assumptions
- Recommended assumptions





Recommended Disability Assumptions

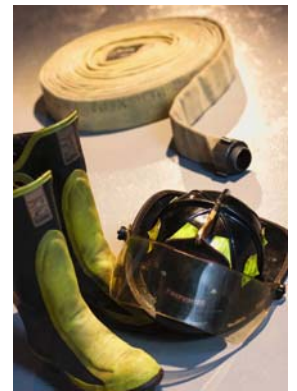


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No Disability Assumption Changes Recommended

- Insufficient historical data under new benefit provisions
- We will continue to monitor experience



Preliminary 2009-11 Budget Impacts

Disability Change

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	\$0.0	\$0.0	\$0.0



Preliminary Contribution Rate Impacts Disability Change

Increase	Member	Local Employer	State
LEOFF 2	0.00%	0.00%	0.00%



Supporting Disability Data

- See Attachment D
- Observed disability experience
- Current assumptions





Recommended Salary Assumptions



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We Model Two Types Of Salary Increases

- General salary increases
 - Mostly cost of living adjustments
- Service-based salary increases
 - All other forms of salary increases
 - Modeled by years of service credit
- Both assumptions together estimate total salary growth

Example

- Joe is a new LEOFF 2 member
- During his first year of employment he receives a 3 percent COLA and a 5 percent step increase
- Joe's total salary increases by 8.15 percent during his first year of employment
- The 3 percent increase is a **general salary increase**
- The 5 percent step increase is a **service-based increase**

Identifying Service-Based Salary Increases

- Service-based increases and general salary increases closely related
- Start with total salary growth by years of service
- Then back-out estimated general salary increases
- You're left with salary increases by years of service
 - Service-based salary increases

General Salary Increases Are Lower Than Assumed

Annual Increase	Assumed General Salary Increase	Observed General Salary Increase*
PERS	4.5%	3.9%
TRS	4.5%	3.8%
LEOFF 2	4.5%	3.9%

** Estimated over experience study period (1984-2006).*



Service-Based Salary Increases Are Lower

- LEOFF 2 increases are below current assumptions



Summary Of Recommended Salary Assumptions

- Lower general salary increase assumption from 4.5 percent to 4.25 percent
 - Separate Board action to apply next biennium
 - Otherwise, next review in 2009
- Lower service-based salary increase assumption
- Why change both assumptions now?
 - Assures assumptions for total salary growth are reasonable
- Why not lower the general salary assumption even more?
 - Future salary growth is uncertain and could vary from past experience



Preliminary 2009-11 Budget Impacts

Salary Change – Service Based Only

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	(\$5.0)	(\$7.5)	(\$12.6)



Preliminary Contribution Rate Impacts Salary Change – Service Based Only

Increase	Member	Local Employer	State
LEOFF 2	(0.40)%	(0.24)%	(0.16)%



Preliminary 2009-11 Budget Impacts

Salary Change – General Only

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	(\$5.4)	(\$8.1)	(\$13.5)



Preliminary Contribution Rate Impacts Salary Change – General Only

Increase	Member	Local Employer	State
LEOFF 2	(0.43)%	(0.26)%	(0.17)%



Supporting Salary Data

- See Attachment E
- Current assumptions
- Observed salary increases
- Recommended assumptions





Recommended Miscellaneous Assumptions



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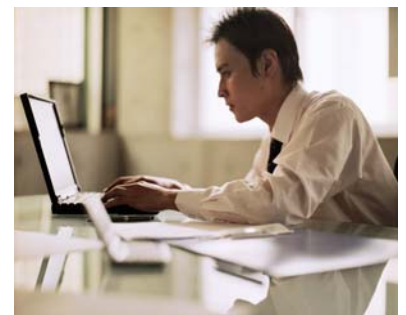
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Miscellaneous Assumptions

- All other assumptions in our model
 - Percentage of deaths
 - duty related and from occupational illness
 - Percentage of disabilities
 - Duty related and catastrophic (total)
 - Probability of terminating and leaving contributions
 - “Certain period” for pension payments
 - Selection of optional “joint and survivor” payment forms
 - Probability of a survivor annuity
 - Default data where missing
 - Age difference between member and beneficiary
 - Gender code
 - Etc.

Summary Of Recommended Miscellaneous Assumptions

- Updates to current assumptions
- Most of these assumptions have very small impacts



Preliminary 2009-11 Budget Impacts

Miscellaneous Change

Increase (\$ in millions)	GF-S	Local Gov't	Total Employer
LEOFF 2	\$0.3	\$0.4	\$0.7



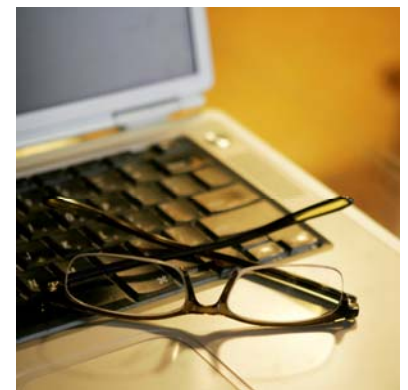
Preliminary Contribution Rate Impacts Miscellaneous Change

Increase	Member	Local Employer	State
LEOFF 2	0.02%	0.01%	0.01%



Supporting Miscellaneous Data

- See Attachment F
- Recommended assumptions



Recap

- Reasonable assumptions contribute to reasonable funding
- Important part of systematic actuarial funding
- Assumption changes impact short-term budgets
 - Financing costs
- Actual plan costs come from actual benefits paid
 - Actual costs
- Pay now or pay more later

Next Steps

- Receive preliminary audit report for July
- Finalize assumptions/contribution rates in July
- Adopt assumptions/contribution rates by July 31, 2008
- Final experience study report released in August



Date: June 16, 2008
To: Law Enforcement Officers' & Firefighters' Plan 2 Retirement Board
From: Marilyn Oliver, FSA MAAA FCA, Vice-President, Bartel Associates, LLC
John E. Bartel, ASA MAAA FCA, President, Bartel Associates, LLC
Cc:
Re: **Preliminary Actuarial Audit Report**

Bartel Associates was retained by the Law Enforcement Officers' & Firefighters' Plan 2 Retirement Board to perform a concurrent audit of the 2001-2006 Experience Study and June 30, 2007 Actuarial Valuation being performed by the Office of the State Actuary. A description of our methodology and the current status of the audit are provided below.

Methodology

Experience Study

Major assumptions addressed in the 2001-2006 experience study include:

- Mortality rates
- Probabilities of termination of employment, retirement, and disability
- Percentage of eligible terminations taking a deferred vested benefit
- Yearly step, merit, longevity, and promotional Salary Increases.

A number of minor assumptions are also included in the study. Examples include assumptions regarding, percentage of members married, spouse ages, and portability.

For each of these assumptions our experience study review includes:

1. Review of the reasonability of the underlying data,
 2. Review of actuarial methods, techniques, and formulas used in the study,
 3. Review of the actual calculations involved in setting each new assumption, and
 4. Review of the reasonability of each of the new assumption
- all within the context of generally accepted actuarial practice and standards.

Contribution Rate Determinations

Our actuarial audit review includes:

1. Review of OSA data procedures and general reasonability of resulting data
 2. Verification of OSA calculation of actuarial liabilities and present values, including impact of plan changes since the last audited valuation, by recalculation using Bartel Associates computer programming
 3. Verification of OSA recognition of revised actuarial assumptions in actuarial liabilities and present values by recalculation using Bartel Associates computer programming
 4. Review of OSA calculation of the actuarial value of assets
 5. Review of contribution rate formulas and calculations
 6. Review of contribution rate changes since prior audit
- all within the context of generally accepted actuarial practice and standards.

Date: June 16, 2008
To: LEOFF Plan 2 Retirement Board
From: Marilyn Oliver & John E. Bartel, Bartel Associates, LLC
Page: 2



Current Status

Currently we are mid-way through our review process and anticipate completion of the audit in conjunction with OSA's release of final contribution rates in July. To date there have been no significant points of disagreement. However, please note that we have not reviewed the OSA preliminary results reports, though portions of the processes, formulas, software and assumptions have been addressed in the course of our review to date. There are no further issues that we feel it is necessary to bring to the Board's attention at this time.

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