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ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

Actuarial Audit Results

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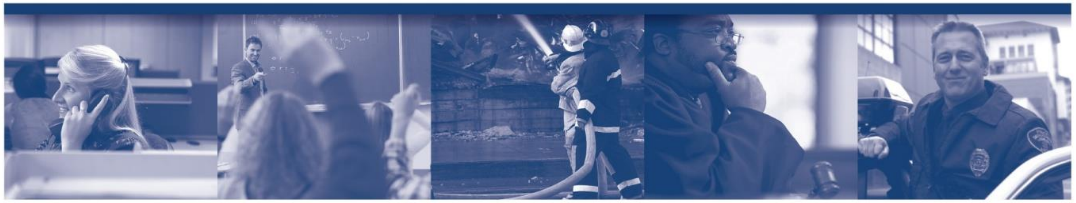

Purpose of an Audit

- Actuarial services are very important services to ACERA, but also highly technical and very specialized
  - Difficult for Board to evaluate the details of Segal's work
  - As fiduciaries, Board is responsible for the accuracy and reliability of the actuarial work

- Actuarial audits address this need
  - Two Types: replication and peer review (sample life)
  - Replication performed for ACERA
    - Most thorough and comprehensive analysis
    - Able to quantify any differences identified

- Includes a review of actuarial assumptions and methods in addition to replication of valuation and accounting report results

Our Approach to the Audit

- Maintain a constructive mindset
- Identify any possible suggestions that might improve the technical valuation process as well as the understanding of, or confidence in, the actuarial results
- Avoid comments that could be considered "nit picky" or just personal preference
- Goal of the audit is to improve the actuarial process and final work product

Items Reviewed

- 12/31/2021 Actuarial Valuation Report

- 12/31/2022 GASB 67, 68, 74, and 75 Reports
  - Uses 12/31/2021 actuarial valuation results

- 2019-2022 Experience

Specific Reviews

- Actuarial assumptions
- Actuarial methods
- Membership data
- Actuarial valuation results
- Actuarial valuation report
- GASB (accounting) reports
- Proposed actuarial assumptions and the experience study report

Actuarial Assumptions

Two general types of actuarial assumptions:

- Economic assumptions: These include the valuation interest rate (expected return on plan assets), assumed rates of salary increase, price inflation, wage inflation, and increases in total payroll. The selection of economic assumptions should conform to ASOP No. 27 “Selection of Economic Assumptions for Measuring Pension Obligations”.

- Demographic assumptions: These include the assumed rates of retirement, mortality, termination, and disability. The selection of demographic assumptions should conform to ASOP No. 35 “Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations”.

Actuarial Assumptions

- Economic Assumptions Reviewed:
  - Price Inflation
  - Retiree Cost-of-Living Increases
  - Investment Return Assumption
  - General Wage Increases
  - Individual Salary Scale
  - Payroll Growth Assumption
  - Additional Cash Out Assumption

- The assumptions for the 12/31/2021 valuation are reasonable in our opinion.
  - A reasonable range of economic assumptions exists
  - Economic assumptions are consistent with those in other similar large public retirement systems

Actuarial Assumptions

- Demographic Assumptions reviewed:
  - Rates of Retirement
  - Rates of Mortality
  - Rates of Termination/Refund of Employee Contributions
  - Rates of Disability
  - Probability of Marriage, Age Difference of Spouse, and Other Minor Assumptions

- The assumptions for the 12/31/2021 valuation are reasonable in our opinion.
  - Reflect typical patterns of behavior in other similar large public retirement systems
  - Reflect specific features of ACERA plan design and operation

Actuarial Methods

Four broad considerations when establishing a funding policy for a pension plan:

- ***Sufficiency:*** The funding target should be the value of benefits accrued to date so that benefits can be paid when due.
- ***Intergenerational equity:*** Taxpayers and members should pay for worker's pensions while those workers are providing their services. The goal is to fund for the worker's benefits over the worker's career.
- ***Stability of contributions:*** Generally governmental entities prefer predictable funding patterns. While stable contributions are easy to budget for, stability should not be achieved at the expense of the first two considerations.
- ***Accountability and transparency:*** Each component of the funding policy should be clear on the intent and effect.

Actuarial Methods

- A funding policy is composed of the following actuarial methods:
  - Actuarial Cost Method
  - Asset Valuation Method
  - Amortization of Unfunded Actuarial Accrued Liability Method
  - Output Smoothing Methods
  - Contribution Lag Policy

- Taken together, the components used for ACERA satisfy the four broad considerations on the previous page

- Each method is also consistent with the relevant ASOP requirements

Actuarial Methods

- Entry Age Normal is nearly universal for public sector plans.
- Actuarial assets use semiannual returns – driven by statutory crediting requirements. Reasonable method.
- Layered amortization method is reasonable
- Output smoothing could be considered as a way to help employers with stable rates. Must coordinate with statutory requirements.
- Short lag between rate determination and implementation means little need to consider the contribution lag.

Census Data

Our analysis of the 12/31/2021 valuation data includes comparisons of relevant data fields in the raw data files provided by ACERA to the final valuation data used by Segal for 100% of the records. Some examples of data fields reviewed include date of birth, service, salary, plan tier, benefit amount, and form of payment. We did not find any concerning issues with the data during our review.

	(1) Valuation Report or Segal Data Files	(2) ACERA Raw Data Files	(1) / (2)
Active Members			
Count	11,326	11,335	99.92%
Average Age	47.1	47.1	100.00%
Average Service	11.3	11.3	100.00%
Average Annualized Salary	105,172	105,216	99.96%
Inactive Vested Members			
Count	3,265	3,233	100.99%
Average Age	47.2	47.2	100.00%
Retired Members			
Count	8,264	8,264	100.00%
Average Age	72.5	72.5	100.00%
Average Monthly Benefit	4,667	4,649	100.39%
Disabled Members			
Count	977	977	100.00%
Average Age	65.4	65.4	100.00%
Average Monthly Benefit	3,950	3,937	100.34%
Beneficiaries			
Count	1,295	1,295	100.00%
Average Age	75.7	75.7	100.00%
Average Monthly Benefit	2,703	2,724	99.23%

Actuarial Valuation Results

- As part of the actuarial audit, CMC used the data provided by Segal to reproduce the valuation liabilities used for the cost calculations.

- Acceptable thresholds for replication results:
  - Present value of future benefits: 1 to 2%
  - Actuarial liability: 5 or less%
  - Normal cost: 5% to 7%
    - More variation due to different valuation software and programming approaches

- We present our analysis the next slide.

- While the results are generally very close, we also looked at a finer level of detail than is displayed. We also looked at detailed results for selected individuals.

Actuarial Valuation Results

Present Value of Future Benefits

General	Segal	CMC	Difference	Safety	Segal	CMC	Difference
Tier 1	$2,518,588	$2,490,974	-1.10%	Tier 1	$ 985,462	$ 974,994	-1.06%
Tier 2	5,581,588	5,548,993	-0.58%	Tier 2	2,113,512	2,108,720	-0.23%
Tier 3	40,725	40,459	-0.65%	Tier 2C	18,951	18,886	-0.34%
Tier 4	1,150,539	1,125,841	-2.15%	Tier 2D	120,452	120,407	-0.04%
	$9,291,440	$9,206,267	-0.92%	Tier 4	316,963	315,956	-0.32%
					$3,555,340	$3,538,963	-0.46%

Actuarial Accrued Liability

General	Segal	CMC	Difference	Safety	Segal	CMC	Difference
Tier 1	$2,512,870	$2,484,373	-1.13%	Tier 1	$ 985,462	$ 974,994	-1.06%
Tier 2	4,929,462	4,888,095	-0.84%	Tier 2	1,898,521	1,879,249	-1.02%
Tier 3	38,334	37,898	-1.14%	Tier 2C	11,719	11,504	-1.83%
Tier 4	398,292	403,831	1.39%	Tier 2D	67,686	67,896	0.31%
	$7,878,958	$7,814,197	-0.82%	Tier 4	87,589	86,078	-1.73%
					$3,050,977	$3,019,721	-1.02%

Normal Cost

General	Segal	CMC	Difference	Safety	Segal	CMC	Difference
Tier 1	$ 1,840	$ 1,531	-16.79%	Tier 1	$ 214	$ -	-100.00%
Tier 2	95,409	83,608	-12.37%	Tier 2	38,532	34,130	-11.42%
Tier 3	539	461	-14.47%	Tier 2C	1,113	974	-12.49%
Tier 4	84,084	71,729	-14.69%	Tier 2D	6,456	5,652	-12.45%
	$ 181,872	$ 157,329	-13.49%	Tier 4	22,615	20,146	-10.92%
					$ 68,930	$ 60,902	-11.65%

Actuarial Valuation Results

- We reviewed the funding calculations:
  - Asset calculations
  - UAAL determination and amortization
  - Contribution rate development

- We ran calculations to determine the reasonableness of the member contribution rates.

- One item with insignificant impact – the projection of reciprocity pay for deferred vested members exceeding the compensation cap is not handled precisely. We suggest Segal consider refining this.

Actuarial Valuation Reports

- The American Academy of Actuaries has issued Actuarial Standards of Practice which deal with measuring pension obligations and communicating the results (ASOP No. 4, 23, 27, 35, 41, 44, 51, and 56)

- Those standards list specific elements to be included, either directly or by reference to other documents, in pension actuarial communications.

- The December 31, 2021 Actuarial Valuation Report for ACERA generally provides sufficient information for another actuary to understand what was done and to assess the reasonableness of the results.

- ***In our review of the report, we found it to be in compliance with the applicable ASOPs.***

GASB Reports

- We reviewed December 31, 2022 GASB report (for GASB 67, 68, 74, and 75) since the December 31, 2021 valuation results form the basis for the liabilities used in these reports.

- We reviewed the reports for disclosures such as the sensitivity analysis, the expense development, the recognition of the deferred inflows and outflows, etc. and found the calculation to be reasonable and transparent.

- We suggest the GASB 67 and 68 reports include an explanation of the development of the discount rate that includes the historical consultation of various accounting professionals and GASB.

Experience Study Proposed Assumptions

- We reviewed the draft Actuarial Experience Study covering 2019 through 2022.

- Covered the same assumptions that we reviewed for the December 31, 2021 valuation. For this portion of the audit, we looked more closely at the process of developing the recommendations and not simply the reasonableness of the result.

- We reviewed the report for compliance with Actuarial Standards of Practice.

Experience Study Report – Economic Assumptions

- **Inflation**
  - Current experience has been volatile
  - We concur with the recommended change from 2.75% to 2.50%
- **Investment Return**
  - Segal changed their methodology for the investment return assumption.
  - We find the newer method more direct and concur that it should result in a similar recommendation.
  - We believe the 7% return assumption is reasonable.
- **Other Economic Assumptions**
  - We believe the recommendations are reasonable.

Experience Study Report – Demographic Assumptions

- Overall, we found the assumptions reasonable

- Suggestions
  - We noted some places where detail on the number of exposures and decrements would be helpful for context.
  - We suggested that noting the possibility of the impact of Covid during this study period could be useful.
  - We offered some ideas that could be considered in future studies.

Audit Conclusions

We find the actuarial valuation results to be generally reasonable and accurate based on the assumptions used. The valuation was performed by qualified actuaries and was performed in accordance with the principles and practices prescribed by the Actuarial Standards Board.

Questions?

THANK YOU